The Boston Medical and Surgical Journal

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July 21, 1921

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Original Articles.

THE PUBLIC HEALTH ACTIVITIES OF WILLIAM T. SEDGWICK.

BY EUGENE R. KELLEY, M.D., BOSTON.

State Commissioner of Public Health.

OTHERS more intimately and much longer associated with Professor Sedgwick will shortly speak upon other features of the many-sided public and professional career of the genial and brilliant man in tribute to whose memory this meeting is held. It has become my duty to recall to your minds a side of Professor Sedgwick's work which has been somewhat overshadowed by his activities in his principal rôle of research scientist and educator. Official health work may correctly be said to have been always a lesser interest with Sedgwick, a "side line," as it were, but it was characteristic of the man that he made his "side lines" count. He has left a deep and lasting impress upon the development of official health work, not only in Massachusetts, but throughout the country.

Professor Sedgwick's connection with the official health activities of this Commonwealth fall into two distinct periods, with several years' interval between them,—the first period in the late 80's and early 90's, under the old State Board of Health; the second, from the creation of the present Department of Health, in 1914, until his death.

Of the earlier services of Professor Sedgwick, as Consulting Biologist to the State Board of Health, it is difficult to give a just estimate. He shares with Drown, the chemist, and with Mills, the hydraulic engineer, and their able colleagues and assistants, the great distinction of demonstrating for all time, in America, two great sanitary principles; first, that water, under certain definite relationships of pollution and domestic use, can produce much sickness, suffering and death, and second, that the same type of water can, by the intelligent utilization of certain biologic laws, be rendered safe for domestic use. How much human suffering and death these discoveries have prevented can never be estimated with even an approximation of exactitude, but it must run into the tens of thousands of cases annually in this country. Incidentally, the application of these discoveries has also greatly improved the aesthetic appearance of our rivers and streams,—in itself a boon to humanity.

While this epoch-making work was in progress, Sedgwick may fairly be said to have founded, for this country at any rate, the now great sanitary specialty of epidemiology. He took an honest and, in his later years, a sometimes almost naïve, pride in the fact that he could in large measure qualify as the "Father of American Epidemiology."

As all public health workers know, it was the coincidence of an extensive epidemic of typhoid fever sweeping down the Merrimack valley in 1890, barely a year from the time when Mills, Drown and Sedgwick had begun their experiments on water and sewage purification, that attracted him so strongly to the epidemiological field and led to his discovery of how forcefully statistics of onset, age, location, duration of illness, fatality, etc., could be brought to throw light upon problems of communicable disease prevalence. This brilliant work led to Sedgwick's recognition as the foremost in prestige and the first in point of time of American scientists who have distinguished themselves as epidemiologists, and from that time until his death, his influence upon the development of American epidemiology cannot be overestimated.

This work, together with his other notable scientific achievements, led to his being called in consultation all over the country on problems involving water and sewage, and soon into baffling disease outbreaks, especially typhoid, when his researches pointed to the other now well-recognized channels of infection. But so thoroughly had the water-borne epidemics of typhoid which he early investigated impressed themselves upon the imagination of both sanitarians and the public generally, that I well recall his whimsical tone of discouragement when he spoke of one occasion, a few years ago, when investigation of the water supply alone as the probable cause had allowed a typhoid outbreak to gain a headway entirely unnecessary, if due regard to other possibilities of infection had been considered from the outset. He said, "We worked hard for ten years to make the American people comprehend that water can transmit typhoid fever, and now twenty years more work seems to have entirely failed to have taught them that anything else can transmit it."

While associated with the State Board of Health, and even before, Professor Sedgwick prepared some notable researches on the poisonous effects of coal gas and water gas, which are summed up in a general report by him and Professor Nicols, also of Technology, in a special report to the Massachusetts Legislature.

Between 1896 and 1915, Professor Sedgwick had no official connection with the State Board of Health of Massachusetts, but this hiatus does not mean that he ceased to be interested in problems of health administration. On the contrary, it was during this period that he devoted much attention to the national, city and rural health administrative problems, without ever losing his interest in state health work.

It was characteristic of Sedgwick that he exerted his influence far more by suggestion, by stimulating new lines of thought and inquiry in others, than even by his own researches, lectures, addresses and writings, although these also exerted a powerful influence upon the development of American public health principles and practice.

His appointment as a member of the Advisory Committee to the Surgeon General of the United State Marine Hospital Service (later the United States Public Health Service) came during the interval when he was not active in State health work. Even those of us who knew him well have no adequate idea of how many of the most brilliant laboratory and field researches that have brought deserved world-wide recognition of the scientific accomplishments of that remarkable corps of sanitarians, were either originally suggested or largely influenced by advice from him.

Casual comments upon the need for more research, more exact information, or for field experimental work in this laboratory problem, or that epidemiological puzzle dropped originally in conversation with Surgeon General Wyman, or the Chief of the Federal Laboratory, or one or another of the Assistant Surgeons General, were, I believe, often so far ahead of the times, that, in some cases, they would lie dormant in the mind of the recipients for years and then by force of circumstance be brought to the surface, tried out and found extremely valuable and practical. I know, on two or three occasions, he has commented to me about such occurrences and would remark, with a chuckle, "And you know 'So and So' is so carried away with his own brand new idea now that he told me all about it with the greatest enthusiasm, having entirely forgotten that I first introduced that idea to him ten years ago."

In December, 1914, Professor Sedgwick was appointed a member of the Public Health Council of the recently created State Department of Health. With the appointment comes the last phase of his official health departmental activities. It is impossible to do justice here to the universality of his interest in the various activities of the Department.

Chairman of the Committee on Food and Drugs, with much past research work on food as a background; with very positive convictions on food conservation; opposed to many of the extreme views of prominent food authorities as encouraging a present day tendency to condemn food that was needed in the world's economy; an enthusiastic advocate of cold storage and food canning methods:—everything relating to the work of our Food and Drug Division was of deepest interest to him.

With his remarkable record in the field of water purification, he found every detail of the Engineering and Water and Sewage Laboratory Divisions' problems, and of the matters referred to the Council's Engineering Committee of definite significance.

With his years of study of epidemiology and his great interest in the problems of practical health administration, especially in the smaller communities, the work of the Communicable Disease Division, and particularly of the District Health Officers, aroused his instant and constant sympathy.

But if a comparison of interests can be made, I feel that the work and the great educational possibilities of our Division of Hygiene appealed to Sedgwick the most strongly of all the Department's manifold activities. He aided greatly in creating it, and when Dr. McLaughlin despaired of getting the Division started for lack of suitable funds for salary of a director, he proposed the release of Professor Gunn from part of his duties at Technology in order that he might organize the work, even though this involved carrying additional detail himself in his educational work, which his failing health warned him to unload.

In many ways I think he took more solid satisfaction out of his position as councilor of the Department than in any other of the nuerous positions of honor and responsibility that he had so ably filled during his long and active public career. At any rate, I can testify for all of us who were privileged to be associated with him, that his cheery optimism, his boundless enthusiasm, and his willing acceptance of tedious detail were ever an inspiration to us.

Far from robust in health, with the constant menace of the insidious malady that finally brought his life to so sudden an end constantly hanging over him, he would joke about it in the most engaging fashion, and quickly detect and resent any little subterfuges we might adopt to lighten, for his benefit, committee duties or tours of inspection. Toward the end, however, he found the pressure of his numerous interests increasingly more than his reserve strength could safely carry, and during the past two years had expressed to me privately, on several occasions, his desire to throw off all his other duties, become Emeritus Professor at Technology, and retain only his position with the Harvard-Technology School of Public Health and his duties as Curator of the Lowell Institute, and as Councilor of the State Department of Public Health. And he would say, "Then I would have much more time to devote to the problems of the Department." It is our misfortune that his plans for adjusting his activities to the infirmities of his cardiac condition could not have become a reality, and yet from the spontaneous promptings of his very nature, it is hard to believe that he would ever have ceased to take an active interest in all matters pertaining to the common enlightenment, the common health, and the common welfare. After all, I cannot but feel that in fulfilling Caesar's dictum as to the happiest death, he went to the death he himself most welcomed. Devoting his last hours to a conference upon the possible promotion of the cause of higher education; full of enthusiasm, with a thousand beneficent plans constantly shaping themselves in that versatile brain and sympathetic soul for the benefit of the causes which lay so close to his heart; in every sense vibrant with the joy of life; as yet touched only in the lightest fashion by the passage of years; with a serene faith in his friends, his country and his God, and in the ultimate achievements of all the ideals for which he had so long striven, he parted from us "Like one that wraps the drapery of his couch about him, and lies down to pleasant dreams."

THE PUBLIC HEALTH WORK OF PROFESSOR SEDGWICK

BY GEORGE C. WHIPPLE, BOSTON.

WILLIAM THOMPSON SEDGWICK, son of William and Anne Thompson Sedgwick, was born at West Hartford, Connecticut, December 29, 1855. His colonial ancestor was Robert Sedgwick, who settled in Boston in 1636. He studied at the Sheffield Scientific School, the Yale Medical School, and Johns Hopkins University. On his twenty-sixth birthday he married Mary Katrine Rice at New Haven, Connecticut. In 1883 he came to Boston and the Massachusetts Institute of Technology, where for thirty-eight years he was Professor of Biology, and Public Health. He died at Boston, January 25, 1921, at the age of sixty-five.

These simple facts tell who Professor Sedgwick was. But what he was and what his life meant to the people of Boston, to hundreds of young students, to the science of public health, and to the Commonwealth of Massachusetts, cannot yet be told or even estimated. His death is too recent and our thoughts are still so touched with sadness that one cannot adequately picture his manifold activities or form a just appreciation of his life or his place in history. But in the various eulogies already written a few words stand out prominently and must be regarded as characteristic of the man. The words are service, public service, kindliness, serenity, inspiration, buoyant optimism, love of young men. Let these suffice. They are eulogy enough for any man.

I have been asked to tell you something about Professor Sedgwick's work in public health. I cannot do so without saying more about my own relations to it than is becoming on such an occasion,—but it is characteristic of his work that it was not done in the seclusion of his study and laboratory, but involved all those with whom he came in contact.

I first knew Professor Sedgwick when I was a student of engineering and he professor of biology at the Institute of Technology. He was thirty-three and I was twenty-two. For the first time (1888-9) he was giving a course of lectures in bacteriology to civil engineers. It was an innovation. Until then, sanitary engineering had leaned for its support on chemistry, but here was a new science coming to its aid. I have in my study the notes which I took of Professor Sedgwick's weekly lectures. They began as follows: "The sanitarian needs a proper working theory." Then he proceeded to develop the germ theory of disease as he had learned it from Pasteur and the other European scientists who were laying the foundations of that science which has done so much for the health of the world. He showed how physicians and engineers had been wrong, how they had groped in the dark, and how, by applying the recently discovered principles of biology, it was possible to give to sanitary engineering new life. Of course, Sedgwick was not the only American to take up with the new ideas. There was Dr. Welch at Johns Hopkins, Dr. Biggs in New York, and others who were doing the same thing. But these other men were in medical schools; Sedgwick was in the Institute of Technology, where the engineering sciences predominated, and therefore his influence on sanitary engineering was the greatest. Nor would it be right to ignore the work of his colleagues in chemistry, such as Professor William Ripley Nichols and Dr. Thomas M. Drown. It was the combination of chemistry and biology with engineering which made the profession of sanitary engineering what it is,—a profession which we are proud to think has become more highly developed in America than in any other country.

It is important to keep in mind certain dates in connection with the work of these Massachusetts scientists. Louis Pasteur's pioneer work in bacteriology was done in the seventies. In 1876, Robert Koch discovered the germ of anthrax. In 1882, he suggested the use of solid culture media, and thus made it possible to consider bacteria in a quantitative way. In 1880, Eberth found the bacillus of typhoid fever. In the same year, Laveran had discovered the malarial parasite. In 1883-4, Klebs and Löffler found the germ of diphtheria. In 1883, Koch found the cholera spirillum. And it was in 1883 that Sedgwick undertook his work in Boston. No wonder that he saw a great future for his beloved science of biology; no wonder that he gave up his intention of being a physician.

Sedgwick did not study bacteriology in Europe, but I remember hearing him tell how he received what was, perhaps, the first batch of Dr. Koch's sterilized nutrient gelatine sent to this country. Professor Nichols brought it over and probably had not realized its physical properties, for it had melted, had saturated the cotton plug of the flask, had oozed out, had become infected and nauseating and was about as far from having the required bacterial purity of a culture medium as one could imagine. It was an inauspicious beginning for bacteriology at the Institute. Professor Nichols must have chuckled over it, for at that time he did not share Sedgwick's optimism in regard to the future of bacteriology.

I remember those first lectures of Sedgwick's. He would hold up a glass of water and talk for an hour about what it contained. He would scare us to death by saying that it contained enough germs of typhoid fever to give the disease to a thousand people, and then go on to show how sanitary engineers could make the water safe to drink.

He started his students off on a hunt for bacteria. One of them studied the bacteria found in the air,—especially the air of hospitals,—for he was hunting for big game. Together they devised a method for straining the bacteria from the air—an aerobioscope—a method still used. Another student helped him to study water,—not only its bacteria, but its other microscopic organisms—those algae which recently caused the bad taste in the water supply of Boston, when for a few weeks it was necessary to draw upon the old Lake Cochituate supply. Another new method of study was devised,—the Sedgwick Rafter method,—still used today.

One of his students took up the study of milk; another that of food; and today the Institute has an important department of industrial biology. Several studied sewage and its methods of treatment, and for years this continued to be a fruitful field of research. Another studied the bacteriology of ice; another the bacteriology of soil. Then there were studies of particular species of bacteria,—the longevity of the typhoid bacillus and so on. The reason for mentioning these things is to illustrate the breadth of the investigations and the fact that Sedgwick always worked with and through his students. He did very little scientific work alone and he generally gave his students more than a fair share of the credit for the work done.

When, after a long experience as a practicing engineer, I came to Harvard to teach, I had many talks with Sedgwick about methods of teaching. He was no longer thirty-three years old, but fifty-five. He had been teaching for twenty-five years, and he gave from his experience. He said, "I keep three things in mind,—the past, the present, and the future. First, I teach by the historical method. That has two advantages: my students learn what has been done, and my lectures don't have to be written over every year. Second, I teach of what is going on now." His present-day students knew well his habit of rushing into the lecture-room with a clipping from the morning paper or a copy of the MEDICAL JOURNAL, and talking about something which somebody had discovered in Chicago or the Fiji Islands, or about some new engineering project. All kinds of fish were caught in his net, and he believed that the students should study these fish while they were alive. Thirdly, he said, "I try to teach of what is likely to happen in the future. I try to make the students see the problems they will be up against." History, present problems, and research,—these were his three principles.

His teaching was far from being exact. Sedgwick did not have a mathematical mind. His lectures were never formally prepared, and as he grew older they became less methodical. He cared for general principles more than for details. The opening sentence of his first lecture to engineers, which I have already quoted, shows what he wanted most to impress upon his students. "The sanitarian needs a proper working theory." But it was chiefly his personal magnetism and his inspiration which told on his students, and this never failed him. His optimism was as strong at sixty-five as it was at thirty-five.

Sedgwick will be remembered first and foremost, as a great teacher,—yes, even as a teacher of teachers,—because his enthusiasm was contagious and others followed in his steps. One has only to mention Dr. Calkins of Columbia, Dr. Jordan of Chicago, Dr. Winslow of Yale, Professor Gunn, and other names, now well known, to realize the extent of Sedgwick's influence as a teacher upon teachers. But among his pupils are sanitary engineers, bacteriologists, health officers, laboratory workers in many fields, Red Cross officials, physicians, nurses, manufacturers, teachers of domestic science, housewives,—men and women, a great company of enthusiastic followers who recognized him as "Chief."

Soon after Sedgwick came to Boston, the Massachusetts State Board of Health began to apply the new ideas in biology and chemistry to the purification of water and sewage under the leadership of Dr. Henry P. Walcott, who for a quarter of a century was Chairman of the Board, and Mr. Hiram F. Mills, a hydraulic engineer, who for an equally long time gave most valuable service to the Commonwealth. A small station for making experiments with sewage and water was built at Lawrence, Mass. Professor Sedgwick was consulting biologist of the State Board of Health, and Dr. Drown was consulting chemist. For many years, even up to this day, the Lawrence Experiment Station has been a center of scientific activity. Some of the leading sanitary engineers of the country began their work there.

While this scientific study of the chemistry and biology of water and sewage was in full blast (1890), a notable epidemic of typhoid fever swept down the Merrimac valley. Professor Sedgwick made a thorough study of this catastrophe and developed methods of investigation which have been followed by American epidemiologists ever since. Although not a mathematician, he marshalled statistics and used them with telling force and drew from them logical conclusions which could not be upset. As a result of the epidemic and the research at the experiment station, the first scientifically designed municipal water filter in America was built at Lawrence. This filter, with additions and modifications, is still in use, and although outgrown in size and ideas, is today protecting the people of Lawrence against a recurrence of an epidemic like that in 1890. In this matter one cannot give the credit to Sedgwick alone, for it is the entire group of scientists who deserve the credit,—Mills, Stearns, Drown, Sedgwick, Hazen, Fuller, and others, most of all, perhaps, to Mr. Mills. Through them, America gave to the world scientific ideas in regard to the disposal of sewage which revolutionized methods of treatment and stimulated the construction of disposal works in scores, perhaps hundreds of cities, in this country and abroad.

Sedgwick became a great interpreter of this scientific work. He joined the New England Water Works Association in 1890, but as early as 1888 he had contributed a paper on the Biological Examination of Water. He was chosen President of the Association in 1906 having already (in 1904) been made an honorary member. His last address before the Association was delivered on September 11, 1918, on a subject appropriate to the times, "From Peace to War, from War to Victory, from Victory to Just Judgment." Those who heard it will never forget the stirring words in which he called for stern justice for Germany and appealed to a higher ideal of God than that held by the Kaiser,—the ideal of Christianity, the ideal of civilization. Sedgwick never separated his science from his patriotism or his religion. He could make science popular and he could take subjects of popular interest and clothe them in the language of science.

The American Public Health Association also claimed Sedgwick's attention. He became a member in 1902 and its president in 1915. He was a member of many committees, was a frequent speaker, most of his addresses having relation to the broader aspects of public health work. It is hardly worth while at this time to recite the long list of scientific societies to which he belonged, but mention should be made of the Society of American Bacteriologists, which he helped to found and of which he was president in 1900; of the American Society of Naturalists over which he presided in 1901, and the American Academy of Arts and Sciences, of which he was a Fellow and to which he gave much time and thought. Society memberships measure the breadth of a man's interest and give him opportunities for bringing his ideas before the scientific world. Some men are merely "belongers,"—others, like Sedgwick, do their full part in promoting the objects of the societies which they join. As Professor Sedgwick advanced in life, his interest changed from one scientific society to another, and his scientific papers shifted from the record of detailed studies to educational and philosophical problems. That change marked the normal development of an active, broadening mind. So we may add to Sedgwick's fame as a great teacher that of interpreter of science.

As early as 1902, Professor Sedgwick was elected a member of the Advisory Committee of the U. S. Public Health Service, and for nearly twenty years he maintained this connection with national public health affairs. When, after the war, a reserve organization was created in this service, Sedgwick was commissioned as Assistant Surgeon General. A few years ago he was made a member of the International Health Board, supported by the Rockefeller Foundation, and thus his interests became world-wide in their scope. Last year he went to England as Exchange Professor from the Massachusetts Institute of Technology to the Universities of Cambridge and Leeds,—and on the eve of his departure a newspaper headline very fittingly characterized him as "Ambassador of Health."

We come, finally, to Sedgwick's last great work in connection with the School of Public Health of Harvard University and the Massachusetts Institute of Technology. This school he helped to establish in 1913 and served as Chairman of the Administrative Board until his death. He delighted to see it grow, he delighted to see students coming to it from foreign countries, — from Italy, from China, from South America, from India and Siam, from Czecho-Slovakia and from Mexico. Few people of Boston realize how solidly this little school has taken its place as a centre of public health education, or how its example has been followed by other universities in America.

Nearly twenty years ago, when Sedgwick joined the American Public Health Association, he was made a member of a committee on the Teaching of Hygiene and the Granting of the Degree of Doctor of Public Health. He always held the view that the public health service was different from the medical service, that a man could be an efficient health executive without being a doctor. His last important address, given at the one hundredth anniversary of the Medical School of the University of Cincinnati, was devoted to the subject of the education of health executives. He advocated what he called the Y plan, by which medical schools should have two programs, alike during the first two years, but afterwards diverging, one towards the degree of Doctor of Medicine and one towards the degree of Doctor of Public Health.

His last act as a member of the Administrative Board of the School of Public Health, held December 19, 1920, was to assist in preparing a statement relative to the future of the school, planning for a reorganization of its government, and doing so at the sacrifice of his own position as Chairman, having in mind only the future good of the cause of public health education. In time to come, Sedgwick's part in the organization of this school, which seems destined to take its place side by side with the Harvard Medical School, will stand forth as one of his most constructive works. May it not be possible that in the near future some friend, or group of friends, will contribute a fund big enough to endow a William Thompson Sedgwick Professorship in this School of Public Health of Harvard University and the Massachusetts Institute of Technology, which he loved so well. What finer memorial could be given than one which would tend to make his name and teaching known to the students of the coming years.

And so we may sum up Professor Sedgwick's life as that of a great teacher, an interpreter of science, a wise councilor, an ambassador of public health. Friend of young men, loyal supporter of the Institute, patriotic citizen, a Christian gentleman, he will be greatly missed by all who were fortunate enough to know him.

On Sunday mornings I like to hear the Harvard student choir sing in Appleton Chapel. Sometimes the music rises and falls in varying melody until at the end it fades away as in a distance. At other times, it pursues a simple motif, which grows in volume until it culminates in a burst of song and, on a sudden, ceases. For an instant the air tingles and is still. But the memory of the glorious chord goes with us through the day, "to charm, to strengthen, and to teach." Thus it was that Professor Sedgwick lived and died, and stays forever in our hearts.

Pathological Laboratory,
New Medical Schools, Cambridge.
9th April, 1921.

Dear Professor Whipple:

I was very much obliged to you for sending me your "memorial address on the public health work of Professor Sedgwick" and also the copy of the late Professor Sedgwick's address on "Modern Medicine and the Public Health," delivered at the Centennial Celebration of the University of Cincinnati. Your estimate of Sedgwick is exceedingly sympathetic and, at the same time, critical; critical, I mean, from the constructive point of view. I can well imagine how you will all miss Professor Sedgwick. His sane, cheery personality, his philosophical grasp, his untiring energy, his keen desire to advance the health of the people, and his high moral tone are things that any nation must esteem it a privilege to have with it, the removal of which it can accept only with anxiety and regret. Many of us in Cambridge who had known his work so long, were quite prepared to think highly of the worker, but not until we knew him well, as he sojourned amongst us, could we appreciate him as we came to do. He went back to America with many friends. Many of us had gained a friend for whom we had not only admiration and respect, but a very great liking. In fact, we had gained two, for Mrs. Sedgwick also won the hearts of all with whom she came in contact. Your "Ambassador of Health" and his colleague well earned their title.

With kind regards, I am

Yours faithfully,

(Signed) G. Sims Woodhead.

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PROFESSOR WILLIAM T. SEDGWICK.

By President A. L. Lowell, Cambridge.

Of Professor Sedgwick's scientific attainments I am not qualified to speak, especially in an assembly of this character. His achievements in these subjects you know far better than I do. It is, therefore, of his personal qualities that I wish to speak; and the most striking of these seem to me to have been his enthusiasm, his generosity and his geniality.

Without enthusiasm, without a belief in the intrinsic value of what he is striving to do, and a confidence in the usefulness of his work, a man can hardly achieve much. Professor Sedgwick had such an enthusiasm in abundance, and he imparted it to others. He was, indeed, an optimist,—that is, he believed that the world was good, could be made better, and that he could help to make it better. This feeling underlay all that he did. He was also a man of many enthusiasms, for the variety of his interests was great; and yet, so far as I could see, no one of them was ever neglected for the others. In spite of uncertain health in the last score of years of his life, he seemed always abreast of everything that he undertook.

The next marked characteristic was his generosity, and that of the rarest kind,—a generosity of mind. He seemed to show no trace of jealousy, was glad that others should get full credit for anything they might do, and took little heed to his own reputation if the good work went on. He showed this quality in the School of Public Health, conducted jointly by the Massachusetts Institute of Technology and Harvard University. Institutional unselfishness is rare, but to Professor Sedgwick it came naturally.

Perhaps this virtue was connected with his geniality. He made friends rapidly, and I never met anyone more agreeable to work with than he was during the more than twenty years that he was Curator at the Lowell Institute, while I was the Trustee. He was suggestive; would accept suggestions and carry them out; and made the path smooth and easy. Everyone he met liked him, because he liked them and sympathized with them.

As Dr. Kelley has said, his end came as he would himself have wished. To all men a lingering illness is a sore trial; but one cannot think of Professor Sedgwick incapacitated for work. To the last minute he labored for the good of men. This community was fortunate in having him come among us, and it is indeed poorer for his loss.

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PROLAPSE OF THE PROSTATE GLAND.

By George M. Garland, M.D., Boston,

Formerly Physician to the Woman's Room in the Out-Patient Department of the Massachusetts General Hospital.

The prostate gland, under normal conditions, is about the size of a horse chestnut and weighs about 20 grams, or two-thirds of an ounce. When much hypertrophied, it may weigh from eight to sixteen times as much as normal. My friend, Dr. Arthur L. Chute, has kindly given me the weight of two specimens that he has observed. These glands weighed respectively, 176 and 330 grams. When the gland is thus increased in weight and unsupported by a firm foundation, it may be easily prolapsed by shocks or jounces. It will be remembered that the membranous portion of the urethra is about one inch long and lies between the prostate and the arch of the pubes. When a prostate is prolapsed, this inch of membranous urethra is naturally crowded together so as to make a valve obstructive to the escape of urine. This is not a theory but a fact, which may be confirmed by any observer of a case of retention of the urine, with an enlarged prostate.

For a number of years, it has been my custom in cases of so-called prostatic obstruction, to administer the following treatment: Cleansing the bowel by a gentle cathartic or by enema, I place the patient in the knee-chest position and, with a rubber cot, I lift the prostate back into position through the rectum. The prostate can be lifted nearly an inch by this method. The treatment restores the membranous portion of the urethra to its normal position, and the result in every case that I have thus treated has been most satisfactory. All of my patients who were dependent upon the catheter for emptying the bladder have, subsequent to treatment, been able to pass their water with absolute freedom. This has proved to me that retention of the urine in the cases thus treated has been due to the valvular folding of the urethra, rather than to deformity of the prostate.

The large prostate, after replacement, tends to remain in proper position unless shaken down again by some force, in which case it will need another replacement; but most of my cases have kept in position and catheterism has been avoided during the balance of their lives. One patient, at present about 80 years of age, has had no obstruction to the flow of urine since I replaced his prostate sixteen years ago.

While I do not think, or claim, that every case can thus be treated and thus escape surgical interference, I do claim that this treatment can be applied in cases where immediate surgical interference would seem unwise, if not dangerous. In illustration of this point, I will describe the following case:

In the summer of 1920, a man on a farm, neighboring to mine, was reported very ill with acute cystitis. He was suffering from great prostration and retention which necessitated the frequent use of a catheter. I went to see him and found his urine loaded with pus and very malodorous. I put him in the knee-chest position and replaced his very large prostate in the manner described above. The next day, both of his testicles were swollen and painful. Applications of cold, however, soon quieted down this disturbance, and from that time to the present, he has been able to pass his water with freedom, and has never required a catheter.

The introduction of a catheter in a case of acute cystitis is, of course, an undesirable operation and tends to increase the bladder disturbance. Cessation of such catheterism seems a prime essential to the cure of the bladder trouble. Subsequent to the replacement of the prostate in the case described above, I treated this man's bladder trouble by urotropin, cystogen and buchu tea, with uniformly progressive benefit, until, after a few weeks, I saw him in the field, hoeing his potatoes. I doubt if a surgeon would have considered his case favorable for surgical interference at the time I applied my treatment.

A QUESTIONNAIRE ON SACRO-ILIAC JOINT LESIONS.

By H. W. Marshall, M.D., Boston.

Letters were sent to three hundred and fifty doctors, and eighty-two replies have been received. These include opinions of general practitioners, general surgeons, medical internists, gynecologists, obstetricians, genito-urinary surgeons, neurologists, and roentgenologists from Boston and neighboring cities; besides opinions of thirty-two orthopedists scattered among some of the larger cities from San Francisco to Boston, and from Manitoba to Louisiana.

The original letter is reprinted, in part, to make clear to readers exact details which led to the tables that are given below·

LETTER.

My dear Dr. ——— :

Your ideas differ from many other doctors in many respects and you are to be congratulated.

Differences of opinion naturally increase in number and variety as medical knowledge becomes more voluminous and varied, so that the question may be asked whether medical efficiency is going to sink to zero when we are overwhelmed by a chaos of numberless facts. Will the medical profession resemble a culture of active yeast cells growing in champagne and finally be brought to a state of quiescence as yeast is finally inhibited by its own accumulated intoxicating products of growth?

This fate can be delayed, at least, if numerous points of agreement are cleared from the field of controversy.

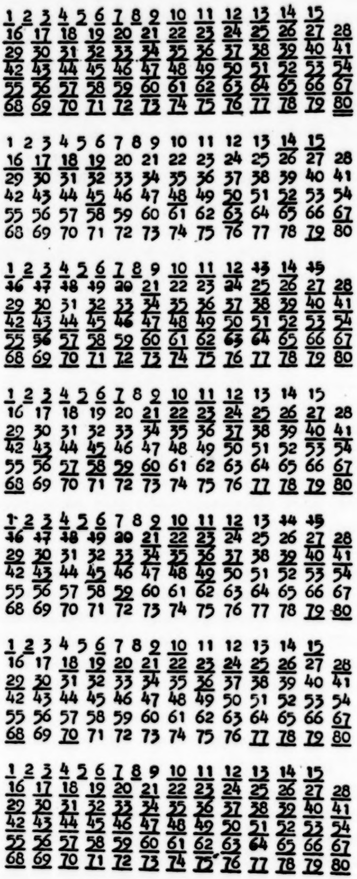
The writer has collected a fairly comprehensive outline of ideas relating to sacro-iliac joint lesions, and has numbered them for convenient reference. Copies are being sent to a selected list of physicians in the hope that they may be persuaded to assist in this experiment by checking off the items that each can agree to personally, without stretch of credulity. In this manner a survey of the selected topic can be obtained that is certain to be interesting; and perhaps general differences between special viewpoints will be illuminatingly shown.

SEVEN SAMPLE REPLY CARDS.

Items agreed with are underscored.

Items disagreed with have a line drawn through them.

Doubtful items are left unmarked.



OUTLINE OF CONCEPTIONS OF SACRO-ILIAC LESIONS.

[Note—Italicized numbers indicate that the items which they mark have been agreed to by the majority of orthopedists whose opinions have been received.]

(*1*) Sacro-iliac joints exhibit very limited sliding motions only when relaxed. They have smooth opposed fibro-cartilaginous bearing surfaces, and are held together by strong ligaments and muscles.

(*2*) Sacro-iliac joints are subject to diseases as other joints are. (*3*) Sacro-iliac joint tuberculosis occurs infrequently as compared with tuberculosis of other joints. (*4*) Hypertrophic periosteal thickenings and calcifications of ligamentous insertions into periosteum are seen commonly around peripheries of sacro-iliac joints as around margins of other joints. (*5*) Fibro-cartilages and adjacent bone may be disintegrated in destructive tubercular lesions. (*6*) Non-tubercular bacteria and their toxins act on sacro-iliac joints as they do on internal structures of other joints with production of local tenderness and pain. (*7*) Neoplasms of iliac bones and sacra occasionally develop and involve sacro-iliac joints so that neoplasms are diagnosed during their early stages generally as simple sacro-iliac strains. (*8*) Sacro-iliac strains accompany lesions of the lumbar spine or hip joints, or both, at times, and especially frequently are lumbo sacral ligamentous strains associated with shifting strains of dorsal sacro-iliac ligaments and sacro-sciatic ligaments.

(*9*) Motions of sacro-iliac joints are normally absent in strong healthy persons. (*10*) There are latent possibilities for normal limited motion that become demonstrable during relaxations of pelvic ligaments accompanying late stages of pregnancy. (*11*) Definite pathological motions with objectively demonstrable repeated slippings in chronically weakened joints occur in an extremely small proportion of all cases of sacro-iliac strains. (*12*) Dr. Goldthwait of Boston first brought into clinical prominence the possibility of sacro-iliac motion by his demonstrations on patients and cadavers. (13) Dr. Smith-Petersen of Boston more recently has observed directly rhythmical changes in positions of sacro-iliac joint surfaces of definite slight degrees that were synchronous with respiratory movements. His observations were made, incidentally, on patients with chronically relaxed joints during operative procedures to induce ankylosis, and joint surfaces in these anesthetized patients were seen to move through openings tunneled laterally through thick iliac regions of innominate bones.

(*14*) Very slight changes in positions of bones of sacro-iliac joints that cannot be demonstrated objectively, probably occur very frequently. (*15*) Evidences of such slight slippings or subluxations are to be found in histories of sudden slipping sensations felt by patients, followed by back pains and tenderness localized in sacro-iliac regions. (*16*) Clinicians consider that this evidence in connection with knowledge of the relatively plane characters of sacro-iliac joint surfaces and with knowledge of functional changes and anatomical stretchings of ligaments, warrants diagnosis of slight sacro-iliac slipping in the majority of instances. *(17)* Such diagnoses can never be made positively, however, and without doubt occasional catchings in smaller intervertebral articulations, or simply abrupt loosenings locally of insertions of a few ligamentous fibers or muscle bundles are included, erroneously, in diagnosis of sacro-iliac slipping. It is very probable, however, from the size and anatomic peculiarities of joint surfaces that sacro-iliac dislocations are most common causes of very common slipping sensations.

(18) Sacro-iliac ligaments are relatively extremely strong and inelastic, but there seems to be sufficient elasticity in temporarily weakened ligaments to allow them to stretch a little without rupturing and to permit slight slipping sensations. *(19)* In the majority of slight subluxations perhaps there are immediate perfect reductions of dislocations again. (20) Sequence of events appears to be that temporarily increased strains on sacro-iliac regions cause slight elastic stretching of ligaments followed by slight slipping of joint surfaces, next followed by immediate relief of temporarily increased tension on ligaments. The relief of tension lets ligaments shorten again instantaneously and joint surfaces slip back into their old positions or remain immovably held in inappreciably dislocated positions with no evidences of slipping remaining, except the sensations felt by patients and subsequent soreness and pains felt in their backs.

(21) Sacro-iliac ligaments show peculiarities common to all strong ligaments of similar character. *(22)* They strengthen and hypertrophy under the influence of continued activity. *(23)* They weaken with prolonged disuse. *(24)* They weaken temporarily when blood supplied to them remains of poor quality for sufficiently long time. *(25)* They strengthen or weaken and continually change slowly in response to the sum of influences always acting upon them. *(26)* Traumata of severe character produce severe symptoms when sustained by either normal or abnormal ligaments. Slight traumata may produce disproportionately severe symptoms in ligaments already seriously weakened from other causes. (27) Gradual calcifications of ligamentous insertions take place in response to long-continued mechanical strains, repeated mild toxaemias and other obscure vascular influences acting in combination until vitality of points of greatest ligamentous strain are lowered to the degree that final calcification processes set in slowly. *(28)* Ligaments that have become stretched to marked degrees may be very weak, or moderately weak, or of average strength, or of more than average strength, depending on circumstances attending the stretching process and subsequent reparative processes. *(29)* Ligaments that have not stretched appreciably may be very weak, or moderately weak, or of average strength, or more than average strength. *(30)* Strengths and lengths of ligaments have to be as carefully separated as physiological and anatomical peculiarities of other structures have to be, although both frequently have to be considered together.

(31) Rates of changes in ligamentous strengths determine to very important degrees severities of accompanying symptoms. (32) Extremely slow weakenings cause mild symptoms. Moderately rapidly developing weakness is accompanied by moderate symptoms. Extremely rapid weakening produces severe symptoms. *(33)* It is as impossible to judge the severity of back symptoms from degrees of ligamentous laxity as it is to judge severity of foot symptoms in foot strains from heights of arches of the feet. *(34)* Stretched ligaments possess powers of shortening very gradually again under favorable circumstances as well as recovering their strengths gradually. These peculiarities may be seen convincingly with badly relaxed and weakened ligaments of knee-joints, and these are able to restore their former conditions completely at times, or even strengthen to greater degrees than existed previously. *(35)* As long as sacro-iliac ligaments, or any other ligaments remain adequate for their physiological tasks anatomic peculiarities possess no pathological significance yet remain latent menaces of difficultly estimated importance.

(36) X-rays confirm clinical facts although there are difficulties in interpretations at times. *(37)* They show that demonstrable pathological relationships of extreme degrees between bones of sacro-ilac joints are extremely rare. *(38)* Border line cases are more common. *(39)* Normal relationships between bones, in certain cases, may be associated with varying grades of symptoms among different patients, depending on factors mentioned in (32). *(40)* Positions of bones seen in single x-rays furnish no absolutely conclusive evidence usually in simple sacro-iliac strains without fractures, of the details of previous ligamentous integrity or weakness, because of confusion arising from possible congenital bony variations. *(41)* Single x-rays do not show whether changes of ligamentous laxity have been slight or great, or whether changes of ligamentous strength have been slight or great, or whether either or both of these changes have taken place slowly or rapidly. *(42)* Very gradual stretchings of pelvic ligaments that have continued until marked degrees are present without pronounced symptoms may be complicated in their late stages by slight new injuries for which x-rays are taken. Under these conditions peculiarities in bony positions revealed will be ascribed almost certainly and erroneously to the recent injuries, whereas, in reality they developed gradually before the latter

were received. (*43* In industrial accidents it would be necessary if x-rays alone were depended on to have them taken before and after accidents in order to measure any changes that might occur. This obviously absurd proposition can be dismissed without comment. (*44*) X-ray variations in border line cases are so slight that it is impossible to tell from them alone whether they represent old compensated slight laxities of no significance or recent changes of positions of bones that are intimately connected with existing symptoms.

(*45*) Bony variations of sacra and vertebrae and variable degrees of lumbar spinal curves possess variable influences that are difficult to estimate, but which are potential factors along with variable weights and variable strengths of ligaments concerned with developments of pathological symptoms. (*46*) Goldthwait first pointed out that unusually long transverse processes of fifth lumbar vertebrae impinge against adjoining iliac bones at times and may pry or hold apart weak sacro-iliac joints. (*47*) In abrupt weakening of pelvic ligaments, associated with severe injuries, it is probably true that extremely long transverse processes of fifth lumbar vertebrae become jammed occasionally against iliac bones and contribute to important degrees to the continuance of symptoms in these rather infrequent cases. (*48*) In gradual stretchings of pelvic and lumbar ligaments long impinging vertebral processes probably occasionally possess significance to less important degrees. (*49*) Long transverse vertebral processes are congenital variations that are elements of strength probably at times, and presumably prevent development of symptoms of sacro-iliac strain in some instances by reinforcing weakening ligaments at such times more than short processes would do. (*50*) It is impossible from clinical data to identify in many cases to which one of these classes any individual belongs. (*51*) Long transverse vertebral processes should not be trimmed off as thereby more harm than benefit results because of necessary surgical damage to important attached ligaments. (*52*) Some anatomical shapes and sizes of sacra and some lumbar curves are more difficult than others for ligaments of sacro-iliac joints to hold, and therefore some must be considered greater contributing factors than others in influences which all exert.

(53) Vascular conditions vary from time to time abruptly or slowly in different instances, and exert variably important influences on variable ligamentous strengths. (54) Vascular influences depend on degrees of vascular variations, whether good or bad, and on variable lengths of time of their continuous actions on ligaments or other joint structures. (55) There are three types of vascular influences, namely, those that produce gradual weakenings and stretchings of ligaments without very pronounced painful symptoms; secondly, those that produce very little laxities of ligaments, but which are associated with marked muscular rigidity and joint tenderness and pronounced pain; thirdly, mixed types combining peculiarities of the other two in intermediate degrees. (56) Those associated with muscular rigidity, tenderness and pain are thought to be of bacterial or toxic origin. Those associated with ligamentous stretchings, slight soreness and pain are thought to be caused by defects among proportions of normal vascular constituents, more or less marked anaemia being usually observed in these latter cases. (*57*) Distant bacterial foci that are thought to exert influences through the blood stream on articulations, affect the latter to important or slight degrees, depending on the size and degrees of activity of different foci and depending on variable efficiencies of natural protective mechanisms of the body from time to time. (*58*) Small, inactive foci are cared for best by the natural protective mechanisms, while large active foci should be diminished therapeutically, if possible, to lessen their harmful influences on crippled joints.

(*59*) Neurological phases of sacro-iliac lesions are rather obscure. (*60*) There may be trophic nerves running to the joints, but their existence is purely theoretical. (*61*) Temporary interference with normal intestinal and urinary functions follow moderate injuries to sacro-iliac and lumbar regions not infrequently, and these temporary symptoms may be due to slight pressures or stretchings of the sympathetic ganglonated cord or its connections, as they all lie intimately applied to the anterior aspect of the vertebral column. (62) Early manipulations of spine and pelvis under anaesthesia will terminate abruptly, in rare instances, derangements in functions of intestinal and urinary sphincters; but paralyses of intestines and bladder also result from unskilful ether manipulations. (*63*) Leg pains in thighs, calves and feet are very common accompaniments of sacro-iliac injuries. (*64*) Conceivably they may result from pressures of oedematous swellings following injuries, either on the sympathetic nervous system or on emerging spinal nerves, or on both. (*65*) Conceivably they are produced by stretchings of spinal nerves when bony displacements are very great, but usually subluxations are too slight to make this explanation possible. (*66*) Probably they are of reflex nature in some instances and induced by lesions of pelvic and abdominal organs. Direct irritations of sensory nerve filaments in periosteum or ligamentous insertions by mechanical strain of body motion and body weight presumably explain many of the painful symptoms. (*67*) Back pains can be independent entirely of co-existent sacro-iliac ligamentous strains, when there are independent vaso-motor disturbances in the nervous system, or when the nervous tissues are unstable from causes lying within themselves, or when they react to faulty proportions of vascular constituents, or when they have been jarred directly by abrupt mechanical causes in so-called traumatic neuroses.

(*68*) Onsets of pathological back symptoms range from extreme slowness to extreme abruptness with all intermediate grades exhibited by many different cases. (69) Extremely gradual onsets represent mainly slow, continuous undermining influences of vascular defects in their actions on muscles and ligaments. (*70*) Abrupt onsets are commonly produced, yet not invariably by mechanical injuries. (71) Intermediate types are produced by vascular and mechanical factors working together very commonly, and in more even combinations. (*72*) When vascular defects have brought ligamentous resistances to low degree by long-continued action, then trivial traumata only are needed to cause pathological symptoms. (73) When vascular conditions act sufficiently long, onsets may occur without appreciable trauma, although the influence of strain from body weight is never absent. (74) When vascular influences have undermined strengths only to slight degrees, then more severe traumata are required to set up pathological symptoms.

(75) Durations of abnormal back symptoms depend on continuance of vascular defects, or continuance of mechanical strains, or combinations of the two factors. (76) Whenever the sum of the two harmful influences changes to favorable level through subsidence of one or both involved factors, then strengths begin to return gradually, and if favorable conditions continue long enough uninterruptedly at most favorable levels, there may be return of ligamentous strengths that even surpass strengths existing previously to injuries. (*77*) It should be clearly understood that it is possible for an extremely trivial injury rarely to be the actual starting point of long-continued back weakness. (*78*) A very severe trauma may be followed by prompt, continuous, complete recovery in a healthy young adult.

(*79*) There is no easy way of standardizing treatments when there is such a plethora of ideas already existent. Therapeutic measures may be as imperfect and incomplete, or be as well-balanced and skillfully applied, as each physician's understanding is of the particular problem. Physical therapeutic measures, massage, exercises, ether manipulations, mechanical braces, belts, jackets, strappings, diets, internal medical regulations, treatments of infective foci, and surgery each have appropriate and inappropriate uses at times in sacro-iliac troubles. (*80*) The art of medical practice varies independently, although it is intimately associated with medical science, and there is as much difficulty in standardizing refinements of medical art as there is in classifying individual excellencies of other accomplished artists. We should agree, however, on the scientific medical principles which control medical practices.

DISCUSSION.

So many interesting comments and criticisms have accompanied the replies to the questionnaire, that brief reference should be made to them.

Some doctors have replied frankly that they have not had time to pass judgments on the items of the outline. Others have returned the outline unanswered with the information that their opinions would not possess much value. Some have restricted themselves to answering a few points about which they have very positive opinions. There have been some who have agreed with all points. No single item, however, has been unanimously agreed on. The majority of all opinions are agreed on the majority of items.

A surgeon expressed himself as follows: "What do I know about a lot of these theoretical questions, and how are they going to be settled by a plebiscite?" An orthopedist said some items are self-evident facts and that the rest he knew nothing about. Another conservative surgeon said, "I think the paper goes much further in detail than any exact knowledge that I know of would justify. But, in a general way, I agree with it." An internist remarked that he didn't know so much could be said about sacro-iliac jonts. A roentgenologist stated facetiously, "After a terrific feat of mental gymnastics, I have underscored some of the numbers."

Some would have the items split more finely, because they agree with part and disagree with other parts of certain items. A careful opinion from Winnipeg, Manitoba, notes that the word, "fibrositis" is not mentioned anywhere in the outline.

Much can be said, either in favor or against this plan of obtaining a vote on this special topic. A sufficient number of answers have been received, however, to furnish an interesting sample of prevailing medical opinions. The tables tend to show the present state of development of orthopedic views, and to what extent they are shared by other departments of medicine.

The natural query arises concerning what is to be done about the many doubts and disagreements. Shall physicians be collected like a legal jury and closeted in forced discussions until better understandings are reached? Undoubtedly, very many differences would be cleared away by thorough interchange of ideas and further explanations. They would be a boon to patients and would force medical progress, but new points of difference, without doubt, would be discovered in thorough discussions. Such a plan would not meet with approval of those physicians who prefer strongly to keep their own ideas exclusively for their private patients.

As long as the progress continues, some physicians will be a short distance in advance of the majority, and with them the latter will agree only incompletely; and there always will be some physicians whose energies have been directed almost exclusively in different directions, who will agree less completely than the majority on many special topics.

The pendulum of opinion has swung, in the past, toward more and more complete medical examinations and more and more thorough treatments; but in the future, it seems there is a likelihood of return swinging away from unnecessarily elaborate treatments, as we become more and more seriously embarassed with a superabundance of knowledge and methods.

Undoubtedly we shall continue, as we have been doing, multiplying special ideas, and originating new schemes, that bring to each doctor patients to practise on, as long as the public confidence remains unshaken. With diminution of the confidence of the public, there may develop, possibly, a new type of physicians, discrimination experts or special types of general practitioners, who aim to pick out, with increasing care, various limited sets of examinations and treatments from among innumerable available kinds in order to secure most satisfactory results.

The foregoing outline of sacro-iliac lesions that the writer has prepared, may be described as a series of items that range from reliable facts to plausible theories based on scientific ideas. Plausible theories have been included, because they are useful, for it is possible to relieve patients at times through faint clues that are correct, although unprovable.

Medical science discountenances such a plan, yet the present generation of doctors and patients, presumably, will be dead before all points touched on in this outline are proved or disproved convincingly to everyone.

Medical science must oppose, necessarily, the unproved theories of medical art while it remains interested always in the latter. Medical art ought to uphold with equal enthusiasm and tenacity its own peculiar practices, originating useful new theories and fancies, keeping always in advance of scientific medical progress, always watching for and accepting new facts that medical science laboriously establishes. Plausible theories are liable to be precursors of scientific facts.

Apparently there are other practitioners who believe, with the writer, that best medical practice very commonly is based on a balanced combination of established facts and carefully considered theories, that in this manner unrestrained speculations are avoided, as well as certain intolerably strict requirements of purely scientific methods. It was with these ideas in view that the outline on sacro-iliac lesions was prepared as a tentative working basis for use now.

Item 9—Motions of sacro-iliac joints are normally absent in strong, healthy persons—has received considerable criticism, and will be amplified and discussed further. Other items could be treated in this manner profitably, if space permitted.

In addition to the statement of the outline, it may be said that motions of sacro-iliac joints exist quite commonly to very slight degrees in strong, healthy persons, without appreciable symptoms. Arguments revolve about definitions of what constitutes a normal condition. The writer has the following ideas on the subject:

When a butcher splits down the vertebral column of a lamb in the median line in preparing cuts of meat, it can be observed that soft, central portions of intervertebral discs bulge out immediately, proving that contents of intervertebral spaces have been held compressed by normal tensions of vertebral ligaments. Similar strong ligaments hold sacro-iliac joints tightly together under similar tension originally, without doubt, although no elastic interarticular substance is present to show evidence of such pressure, when sacro-iliac joints are split across.

This tense state of ligaments is comparable to elastic muscle tone, and the writer would recognize both as representing normal states, while all pronounced laxities would be considered abnormalities, even though they are not associated with pathological symptoms of appreciable degrees.

Ligaments undoubtedly stretch in physiological manner during pregnancies, and often do not regain their normal tone again, being comparable in this respect to symptomless laxities of variable degrees of abdominal walls, following parturition. Ligaments stretch and weaken also in obscure conditions associated with anaemias and vascular defects, and subsequently strengthen, not infrequently, without regaining their original lengths. It seems better to the writer to designate these slight residual laxities as slight defects which do not interfere appreciably, in many instances, with normal physiologic rigidity of the pelvis.

To obtain a precise idea of the amount of ligamentous stretching required to permit slight slipping, also the extent of slipping that may take place, let the following experiment be made. Place the surfaces of the two thumb nails in contact and press them firmly together. Then push, or pull, one surface back and forth over the other a little, until a clicking sound is produced as friction between the two tightly pressed surfaces is overcome.

Note what an extremely slight slipping sometimes will produce it. If the thumbs are pressed very strongly, the sound is loud, and it diminishes as pressure diminishes. There are accompanying sudden muscular sensations felt in the arms, a slight giving way when the slipping occurs, which may be compared with back sensations described as feelings of something giving way. If a tight band encircled the two opposed thumb tips, it would have to possess only an immeasurably small amount of elasticity to permit such extremely slight sliding displacements.

Another experiment may be tried in making one's fingers crack audibly. Some persons have ligaments of their finger joints elastic enough to permit imperceptible sudden slippings of joint surfaces easily when a finger is pulled in direction of its extended length. There are similar slight giving way sensations as observed in the instance of the thumb nail slipping.

Other joints may be made to crack in similar fashion without appreciably painful symptoms; and if these signs and sensations are transferred to sacro-iliac joints, a satisfactory theoretical understanding of their slight imperceptible motions becomes possible. Rigid pelves of strong, healthy persons can be made to crack occasionally, especially if ligaments are stretched under ether anaesthesia. Osteopaths crack sacro-iliac joints without anaesthesia. These sounds are caused sometimes, probably, by joint slippings and sometimes by other causes, as, for example, slippings between surfaces of muscular aponeuroses.

The statement in item 9 is incorrect, if slight symptomless laxities of ligaments are considered normal, if emphasis is laid on these slight defects representing traces of motion that require keen powers of imagination, often, to accept, while normal pelvic rigidity is relegated to the background.

Many doubts and disagreements, presumably, could be traced to unavoidable incompleteness of description in the outline, facts being known and doubts about them fewer than the outline indicates.

Matters of far greater practical importance than slight, symptomless joint slippings, are physiological properties of ligamentous and fibrous tissues of sacro-iliac or other joints. Their physiology should be understood, if attempts are made to re-inforce ligaments with orthopedic braces, or to strengthen them by other therapeutic means.

Space does not permit discussion of differences between living and dead ligamentous or connective tissue fibers, their variations in strengths, lengths and elasticities from time to time. Nor powers of growth, hypertrophy, inflammatory reactions, waste, repair, possessed by all living tissues. Nor bio-chemical and biophysical peculiarities that appear extremely fanciful to some doctors at first glance.

Nevertheless, the writer ventures to believe that many treatments are bunglingly managed, and that more harm than benefit results from medical care of back troubles, not infrequently because physicians reject unfamiliar ideas as unwarantable theories. Backs, in consequence, may be supported too much, exercised too much, manipulated too vigorously, vascular regulations neglected, and so on, and yet patients continue to recover, in spite of such treatment.

Obscure vascular conditions and ways that joints may be influenced through the blood, are items about which the majority of all physicians have rightly expressed doubts, although more might accept them as plausible theories.

A general surgeon commented on the outline as follows: "A large number of observations, or deductions, especially those on vascular changes, are, in my opinion, purely speculative, and rest upon no anatomic, physiologic, or clinical basis whatever. "An orthopedist said: "There are so many highly theoretical, to say nothing of extremely improbable suppositions in this paper, that the questions are hard, indeed, to answer."

Obscure infinitely complicated reactions of living tissue cells to obscure infinitely complicated peculiarities of blood and lymph are far removed, apparently, from gross anatomical, physiological, and mechanical problems of many successful orthopedic or general surgical practitioners. If, however, anyone cares to study the data and theories pertaining to cellular biology long enough, it is possible to get one's imagination and thought tuned correctly to the pitch demanded by this topic.

Then there will be observed numerous suggestive clinical data that can be linked with gross anatomic peculiarities and established physiologic facts on a biological basis to form plausible theories which the writer has found very useful in practice. Space does not permit their discussion, but in the meanwhile obscure reactions continue to take place between joints, blood and lymph, whether or not we accept them or try to understand them. We have to fit our convenience to the complexities of the situation, not try to fit complexities entirely to our greatest convenience.

An orthopedic opinion from California states that the most important mechanical etiological factors, namely, vertebral conditions, are hardly considered in the questionnaire. The following comments of a general surgeon are interesting: "In anaemia, muscles may atrophy, and more load be thrown on the ligaments, but I am not sure that anemia causes atrophy and weakening of the ligaments. What proof have you that a ligament varies in size and strength with the vascular changes? In subjects with marked muscular atrophy, there is no evidence of ligamentous atrophy. Ligamentous attachments may weaken, but I doubt if the ligament weakens."

After reviewing all of the foregoing ideas and opinions, it is easier to picture what determines the precise treatment any selected patient may receive. Treatments are determined by clinical judgments, carefully or hurriedly made, based on complete or incomplete understandings of underlying scientific facts, and modified by clinical facilities at hand. It may appear plain that any lightly conceived whim, perhaps erroneous, can decide what shall happen to the patient, despite all scientific safeguards. Medical speculations are very liable to be dangerous, also they are indispensible for greatest clinical successes, frequently; therefore working hypotheses and theoretical conceptions should be subjected to close scrutiny and criticism, such as this outline has received. These discussions may yield, possibly, more accurate complete conceptions for all who have coöperated, and the writer wishes to express his hearty thanks to each of those who have helped to make this paper possible.

TABLES OF OPINIONS RECEIVED.

ITEM		NUMBER			PER CENT.		
		Agreed	Doubtful	Disagreed	Agreed	Doubtful	Disagreed
1	orthopedic	27	4	1	84	13	3
	balance	43	5	2	86	10	4
	total	70	9	3	85	11	4
2	orthopedic	31	1	0	97	3	0
	balance	40	9	1	80	18	2
	total	71	10	1	87	12	1
3	orthopedic	30	2	0	94	6	0
	balance	34	16	0	68	32	0
	total	64	18	0	78	22	0
4	orthopedic	21	6	5	66	19	15
	balance	26	23	1	52	46	2
	total	47	29	6	58	35	7
5	orthopedic	29	3	0	91	9	0
	balance	27	22	1	54	44	2
	total	56	25	1	69	30	1
6	orthopedic	27	4	1	84	13	3
	balance	29	18	3	58	36	6
	total	56	22	4	68	27	5
7	orthopedic	25	6	1	78	19	3
	balance	22	27	1	44	52	2
	total	47	33	2	58	40	2
8	orthopedic	24	7	1	75	22	3
	balance	33	17	0	66	34	0
	total	57	24	1	70	29	1
9	orthopedic	17	9	6	53	28	19
	balance	35	11	4	70	22	8
	total	52	20	10	64	24	12
10	orthopedic	29	3	0	91	9	0
	balance	37	13	0	74	26	0
	total	66	16	0	80	20	0
11	orthopedic	29	3	0	91	9	0
	balance	31	17	2	62	34	4
	total	60	20	2	73	25	2
12	orthopedic	24	8	0	75	25	0
	balance	24	26	0	48	52	0
	total	48	34	0	58	42	0
13	orthopedic	10	20	2	31	63	6
	balance	7	43	0	14	86	0
	total	17	63	2	21	77	2
14	orthopedic	23	8	1	72	25	3
	balance	38	10	2	76	20	4
	total	61	18	3	74	22	4
15	orthopedic	23	7	2	72	22	6
	balance	38	11	1	76	22	2
	total	61	18	3	74	22	4

TABLES OF OPINIONS RECEIVED (*continued*).

Item		Number			Per Cent.		
		Agreed	Doubtful	Disagreed	Agreed	Doubtful	Disagreed
16	orthopedic	19	9	4	60	28	12
	balance	36	13	1	72	26	2
	total	55	22	5	67	27	6
17	orthopedic	20	9	3	63	28	9
	balance	32	17	1	64	34	2
	total	52	26	4	63	32	5
18	orthopedic	24	6	2	75	19	6
	balance	37	12	1	74	24	2
	total	61	18	3	74	22	4
19	orthopedic	21	8	3	66	25	9
	balance	33	16	1	66	32	2
	total	54	24	4	66	29	5
20	orthopedic	14	12	6	44	37	19
	balance	29	20	1	58	40	2
	total	43	32	7	52	39	9
21	orthopedic	30	2	0	94	6	0
	balance	34	16	0	68	32	0
	total	64	18	0	78	22	0
22	orthopedic	25	7	0	78	22	0
	balance	31	18	1	62	36	2
	total	56	25	1	68	31	1
23	orthopedic	27	5	0	84	16	0
	balance	34	15	1	68	30	2
	total	61	20	1	75	24	1
24	orthopedic	19	21	1	59	38	3
	balance	27	22	1	54	44	2
	total	46	34	2	56	42	2
25	orthopedic	25	7	0	78	22	0
	balance	27	22	1	54	44	2
	total	52	29	1	64	35	1
26	orthopedic	29	3	0	91	9	0
	balance	40	10	0	80	20	0
	total	69	13	0	84	16	0
27	orthopedic	15	17	0	47	53	0
	balance	17	31	2	34	62	4
	total	32	48	2	39	59	2
28	orthopedic	23	9	0	72	28	0
	balance	30	19	1	60	38	2
	total	53	28	1	65	34	1
29	orthopedic	22	10	0	69	31	0
	balance	24	25	1	48	50	2
	total	46	35	1	56	43	1
30	orthopedic	21	11	0	66	34	0
	balance	21	28	1	42	56	2
	total	42	39	1	51	48	1
31	orthopedic	15	16	1	47	50	3
	balance	17	32	1	34	64	2
	total	32	48	2	39	59	2
32	orthopedic	16	15	1	50	47	3
	balance	22	26	2	44	52	4
	total	38	41	3	46	50	4
33	orthopedic	25	6	1	78	19	3
	balance	29	21	0	58	42	0
	total	54	27	1	66	33	1
34	orthopedic	26	6	0	81	19	0
	balance	30	19	1	60	38	2
	total	56	25	1	68	31	1
35	orthopedic	25	6	1	78	19	3
	balance	32	18	0	64	36	0
	total	57	24	1	69	30	1
36	orthopedic	19	8	5	59	25	16
	balance	33	13	4	66	26	8
	total	52	21	9	63	26	11
37	orthopedic	26	6	0	81	19	0
	balance	29	21	0	58	42	0
	total	55	27	0	67	33	0

TABLES OF OPINIONS RECEIVED (*continued*).

Item		Number			Per Cent.		
		Agreed	Doubtful	Disagreed	Agreed	Doubtful	Disagreed
38	orthopedic	21	11	0	66	34	0
	balance	20	30	0	40	60	0
	total	41	41	0	50	50	0
39	orthopedic	19	13	0	59	41	0
	balance	29	20	1	58	40	2
	total	48	33	1	59	40	1
40	orthopedic	25	7	0	78	22	0
	balance	31	18	1	62	36	2
	total	56	25	1	68	31	1
41	orthopedic	27	5	0	84	16	0
	balance	29	21	0	58	42	0
	total	56	26	0	68	32	0
42	orthopedic	20	11	1	63	34	3
	balance	29	21	0	58	42	0
	total	49	32	1	60	39	1
43	orthopedic	21	11	0	66	34	0
	balance	32	17	1	64	34	2
	total	53	28	1	65	34	1
44	orthopedic	26	6	0	81	19	0
	balance	32	18	0	64	36	0
	total	58	24	0	71	29	0
45	orthopedic	30	2	0	94	6	0
	balance	30	20	0	60	40	0
	total	60	22	0	73	27	0
46	orthopedic	18	11	3	56	35	9
	balance	20	28	2	40	56	4
	total	38	39	5	46	48	6
47	orthopedic	19	10	3	59	32	9
	balance	18	30	2	36	60	4
	total	37	40	5	45	49	6
48	orthopedic	17	12	3	53	38	9
	balance	17	32	1	34	64	2
	total	34	44	4	41	54	5
49	orthopedic	18	11	3	56	35	9
	balance	11	39	0	22	78	0
	total	29	50	3	35	61	4
50	orthopedic	24	8	0	75	25	0
	balance	23	27	0	46	54	0
	total	47	35	0	57	43	0
51	orthopedic	17	11	4	53	35	12
	balance	18	31	1	36	62	2
	total	35	42	5	43	51	6
52	orthopedic	24	8	0	75	25	0
	balance	24	26	0	48	52	0
	total	48	34	0	58	42	0
53	orthopedic	11	19	2	34	60	6
	balance	18	30	2	36	60	4
	total	29	49	4	35	60	5
54	orthopedic	14	17	1	44	53	3
	balance	13	35	2	26	70	4
	total	27	52	3	33	63	4
55	orthopedic	9	22	1	28	69	3
	balance	11	37	2	22	74	4
	total	20	59	3	24	72	4
56	orthopedic	12	17	3	37	54	9
	balance	11	37	2	22	74	4
	total	23	54	5	28	66	6
57	orthopedic	21	11	0	66	34	0
	balance	25	25	0	50	50	0
	total	46	36	0	56	44	0
58	orthopedic	21	9	2	66	28	6
	balance	27	22	1	52	44	2
	total	48	31	3	58	38	4
59	orthopedic	25	7	0	78	22	0
	balance	28	22	0	56	44	0
	total	53	29	0	65	35	0

TABLES OF OPINIONS RECEIVED (*continued*).

Item		Number			Per Cent.		
		Agreed	Doubtful	Disagreed	Agreed	Doubtful	Disagreed
60	orthopedic	19	13	0	59	41	0
	balance	19	30	1	38	60	2
	total	38	43	1	46	53	1
61	orthopedic	20	10	2	63	31	6
	balance	17	31	2	34	62	4
	total	37	41	4	45	50	5
62	orthopedic	15	15	2	47	47	6
	balance	9	39	2	18	78	4
	total	24	54	4	29	66	5
63	orthopedic	27	4	1	84	13	3
	balance	36	14	0	72	28	0
	total	63	18	1	77	22	1
64	orthopedic	19	11	2	59	35	6
	balance	24	25	1	48	50	2
	total	43	36	3	52	43	5
65	orthopedic	20	10	2	63	31	6
	balance	17	31	2	34	62	4
	total	37	41	4	45	50	5
66	orthopedic	18	14	0	56	44	0
	balance	16	33	1	32	66	2
	total	34	47	1	41	58	1
67	orthopedic	23	9	0	72	28	0
	balance	22	27	1	44	54	2
	total	45	36	1	55	44	1
68	orthopedic	26	6	0	81	19	0
	balance	33	17	0	66	34	0
	total	59	23	0	72	28	0
69	orthopedic	13	15	4	41	47	12
	balance	19	30	1	38	60	2
	total	32	45	5	39	55	6
70	orthopedic	24	5	3	75	16	9
	balance	34	16	0	68	32	0
	total	58	21	3	71	25	4
71	orthopedic	15	15	2	47	47	6
	balance	15	35	0	30	70	0
	total	30	50	2	37	61	2
72	orthopedic	17	13	2	53	41	6
	balance	20	28	2	40	56	4
	total	37	41	4	45	50	5
73	orthopedic	15	14	3	47	44	9
	balance	20	28	2	40	56	4
	total	35	42	5	43	51	6
74	orthopedic	15	14	3	47	44	9
	balance	19	29	2	38	58	4
	total	34	43	5	41	53	6
75	orthopedic	14	15	3	44	47	9
	balance	20	29	1	40	58	2
	total	34	44	4	41	54	5
76	orthopedic	12	19	1	38	59	3
	balance	14	35	1	28	70	2
	total	26	54	2	32	66	2
77	orthopedic	25	7	0	78	22	0
	balance	36	14	0	72	28	0
	total	61	21	0	74	26	0
78	orthopedic	27	5	0	84	16	0
	balance	37	13	0	74	26	0
	total	64	18	0	78	22	0
79	orthopedic	30	1	1	94	3	3
	balance	43	7	0	86	14	0
	total	73	8	1	89	10	1
80	orthopedic	23	8	1	72	25	3
	balance	40	10	0	80	20	0
	total	63	18	1	77	22	1

Medical Progress

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

SITUATION OF LUPUS VULGARIS.[1]

CARL WITH, first assistant at the Finsen Light Institute at Copenhagen, recognizing the well-known fact that the situation of lesions often gave important information with regard to diagnosis, instituted an investigation into the frequency with which lupus vulgaris appeared in various localities. He examined 665 patients over 16 years of age, of whom 492 were women and 173 men. Among these, lupus vulgaris was found only eleven times on the *scalp*, and in none of these cases was the scalp the only, or the primary locality affected. In 26 patients, lupus vulgaris was found on the *forehead*, and in these it was rarely a primary localization, but was usually connected with foci elsewhere, especially with spots in the eyebrows, and rarely continuous with spots at the root of the nose or on the temple. In 33 patients the affection occurred on the *temple*, but in no case was this the primary or sole localization. The *inner corner of the eye* was affected in 17 patients, and then usually developed in scars from perforated dacryocystitis, which had often followed lupus in the nasal cavity. Lupus of the *upper lid* occurred only 13 times, mostly in men, and only once was this the primary locality. It occurred only 11 times on the *lower lid*, and 18 times on the *eyebrows*. The *nose*, which, more than any other part, gives lupus its character, was affected in 323 cases, about 48%; and in 208 cases this was the primary locality. It is nearly always the soft part of the nose that is attacked first. The *cheeks* were just as often affected as the nose. The *ears* were the seat of lupus 76 times, and the *region of the neck* 202 times. Lupus is relatively rare on the *trunk*, and when present is usually on the buttocks or the shoulders. The upper extremities are more frequently attacked than the lower.

With regard to children, it was found that the younger the individual, the more frequently, comparatively, were the extremities attacked. It was found that lupus of the nose behaves differently in children than in adults, and that the nose suddenly becomes, at about the age of puberty, the most frequent point of attack.

It is now generally recognized that lupus of the nasal cavity is more frequently primary than lupus on the skin of the nose, and this is confirmed by the writer's observation. He considers it most probable that the haematogenous mode of infection plays the chief part, and that the mucous membrane is the primary site. He finds that in lupus of the cheek it began 26 times as a subcutaneous node and 33 times as a spot on the skin; while in the case of lupus of the neck, it began 151 times in scars from suppurating lymphomas of the neck. On the neck, only a few cases could be traced to a subcutaneous node that did not owe its origin to a lymphoma.

In conclusion, the writer states that his examination of the 900 patients has confirmed the previous belief regarding the frequency of lupus on and in the nose, and also regarding the lymphoma of the neck, being the chief cause of the lupus there. Also he emphasizes the fact that lupus on and in the nose, compared with lupus on the centre of the cheek, is comparatively rare in children, but increases between the ages of 11 and 16. Also lupus of the extremities is comparatively frequent in children.

CUTANEOUS SENSITIZATION IN SKIN DISEASES.[2]

Engman and Wander, of St. Louis, reported the results of their investigations of this subject at the last meeting of the American Dermatological Association, in Asheville. A large number of skin diseases were selected for investigation, including those that it was thought possible might have some connection with the so-called protein sensitization. In this way, acne, urticaria, erythema multiforme, lichen urticatus, pompholyx, purpura haemorrhagica, pemphigus, trade dermatitis, dermatitis vegetans and eczema were studied. The patients tested came from both public and private practice, and confirmatory diagnoses were always made by two or more clinicians. Food proteins representing wheat, milk, egg, beef, pork and any others that the individual case might suggest, were made use of. The tests were made on the inner surface of the forearm; a small incision, about 1/8 inch long, was made through the epidermis with a very sharp von Pirquet scarifier, the incisions being placed about one inch apart. The incision was then covered with a drop of 1-10 normal sodium hydroxid solution to which was added at once a small quantity of the proteid solution. The use of alcohol immediately before the test, for the purpose of cleansing, should be avoided, as it tends, they claim, to decrease the surrounding erythematous areola in positive reactions. A half hour's time was always allowed for the development of the lesion. It is interesting to note that tests made at different times differed in the degree of their reaction. "When a positive reaction is obtained from a protein that exists in a number of foodstuffs in a certain group, a person reacting to this protein will probably react in a milder degree to several of the other proteins belonging to this group; for instance, if sensitization to beef exists, all other meats may also produce a similar but milder reaction. This rule holds good with the proteins of grains, especially wheat, in which there may be a sensitization giving a reaction to the protein of several other grains."

Unfortunately it was not possible to obtain absolute control of the patients' diet and habits, except in a few cases. When there is improvement under dietetic control this is followed by an exacerbation. On returning to the suspected diet, we have, of course a measure of the patient's tolerance.

No results were obtained from these tests in 18 cases of acne. In dermatitis herpetiformis, which they consider undoubtedly due to some form of toxemia, inasmuch as Engman has shown several times its close relationship with intestinal putrefaction, and as drugs have been known to incite it, only one of 11 cases investigated gave a slight reaction to horse dander, a protein that obviously produces its greatest harm through external or local influence. Nineteen cases of urticaria were investigated, of whom fifteen reacted in some manner to the tests, and very satisfactory therapeutic results were obtained whenever the diet could be controlled absolutely. Of all varieties of proteins, egg white and wheat seemed to be the ones to which the largest number of these patients react, and these all improved when the diet was appropriately restricted. The tests were negative in erythema multiforme, lichen urticatus, pemphigus, purpura haemorrhagica, trade dermatitis, and dermatitis vegetans. Positive results were obtained in some cases of erythematous and chronic eczema, while the acute forms showed a negative reaction, proving, in the writer's opinion, that most of the very acute forms were due to purely external chemical causes. An interesting case is that of a man of 33, who had an erythematous eczema for 15 years and was very sensitive to horse dander, as the attacks coincided with his exposure to this source of irritation. With regard to infantile eczema, 36 cases of the exudative type, representing 78% of those examined, responded positively to some protein sensitization; 9 to egg-white, 2 to egg-white and cow's milk, 6 to milk (mother's only), 5 to milk (cow's only), and 6 to wheat only. In the small number of cases in which it was possible to control the diet, excellent results were obtained. They think that all the cases of this group could have been cured if they had had absolute control of the diet.

In conclusion, among other points, the writers say that although they have not yet had sufficient experience with sensitization to speak dogmatically of its merits, they consider that it has as great a future in cutaneous therapeutic as it has in asthma and affections of the air passages.

DIGESTIVE ANTIANAPHYLAXIS.[3]

Since the work of Charles Richet on anaphylaxis, a certain number of writers have advanced the theory that urticaria of alimentary origin should be included in the category of anaphylactic accidents. This view is favored by the reappearance of the eruption after the ingestion of certain articles of food always the same; its sudden appearance a limited time after ingestion, and the similarity of its accompanying symptoms with those that occur in anaphylactic shocks. This is, however, an hypothesis only. In 1914, M. Widal, studying a case of giant urticaria prolonged through six years, and attributable to food of animal nature, showed that during the attacks the cutaneous symptoms were preceded by vascular phenomena, such as a fall in the white globules and in the arterial tension, disturbance in the blood coagulation, etc. This is just what is observed in the course of anaphylactic shocks. In 1916, Pagnier and Vallery-Radot,[3] whose article we are here quoting, published a case of urticaria which was in a condition of anaphylaxis, not only for animal, but for vegetable albumens. Various therapeutic experiments having failed, such as chloride of calcium, adrenalin, etc., the method of M. Besredka was successfully tried, that of giving the patient, an hour before his meal, a small quantity of food analogous to that which was to constitute his repast. In this way they succeeded in enabling him to take with impunity the food that was for him the most harmful. It was also found that by taking 50 centigrammes of peptone an hour before meals, the patient could tolerate any sort of albumen. Hence in cases when they have observed that the subject was sensitized for various albumens, animal and vegetable, they have given peptone, while in cases of sensitization for special articles of food, such as eggs, milk, fish, they have had good results in certain cases by giving small amounts of the natural substance. In a certain number of cases a curative result has been attained in this way. It is not recommended to continue the ingestion of peptone indefinitely. It should be suspended after a certain time, and renewed, if necessary, for some days or weeks. The case of a young man is cited, who has had since 12 years of age, outbursts of urticaria following the ingestion of lobster, crabs, etc. By making him take, an hour before the meal, a very small quantity of these foods, their toxic effect was prevented. In another case, there was a state of anaphylaxis for eggs: about two minutes after the ingestion of eggs, violent cutaneous and general symptoms appeared, which lasted for a variable time. If a small quantity of egg was taken before a meal that comprised two eggs, there was almost no toxic effect.

In the case of urticaria produced by medicaments, the antianaphylactic method has been tried with success. In the case of absolute intolerance for quinine, five milligrams of sulphate of quinine, taken an hour and a half before the habitual dose, have served to ward off the toxic effect. In pruritus also, this method has been successful. Two remarkable cases of pruritus, without known cause, which had lasted between four and five years, disappeared under the ingestion of peptone. There is also a possibility of the value of this treatment in certain cases of migraine and asthma.

It is admitted, however, that this antianaphylactic method is not always successful. Many cases of rebellious urticaria are observed in which no result is obtained. Perhaps these urticarias are not of alimentary origin, or perhaps the preventive repast or the peptone is not given at the proper interval of time or in the proper quantity, and it is to be emphasized that the susceptibility to a given agent varies much with the individual, and that each case must be judged by itself, so that a rigid preventive technique cannot be laid down as applicable to each instance.

RADIUM IN TREATMENT OF DISEASES OF THE EYE AND ADNEXA.[4]

New and Benedict, of the Mayo Clinic, have used radium in diseases of the eye in two groups of cases; first, those which, in their judgment, should be treated by radium alone, and second, those in which it is employed in addition to surgery. It is applied in the form of a plaque directly to the growth, or as emanations. In the case of tumors, it is best to insert the emanation or the radium directly into the centre of the tumor. In superficial lesions, it is preferable to apply the plaque or the radium tube directly against the skin. It is desirable to protect the cornea in treating lesions of the lid by means of a screen of lead, but no serious effects have been noted on the cornea. The writers consider radium a specific for angioma, lymphangioma, and hemangioma of the lids, and the best results are in young children where little, if any deformity results. In the cavernous type, the radium is used in the form of a very small tube inserted into the centre of the tumor, through an opening made by a small pointed forceps, and the radium, attached to a silk thread, is inserted into this opening. In blastomycosis, the radium tube, or plaque, is held directly over the lesion. The method is very successful in basal-cell epithelioma of the lids without involvement of the tarsus or bone. An active and rapidly extending lesion is probably a squamous-cell epithelioma which has developed on basal-cell epithelioma and does not respond to radium so well as the basal type, and therefore should be removed by the knife or cautery and the open wound treated by radium. The patient should return for observation about every six weeks, for several months, so that there may be further treatment if necessary. Radium is not advised in the case of melanotic tumors, but a radical operation for removal. Sarcoma of the orbit is best treated by inserting radium in tube form directly into the tumor. In young children, the sarcoma has been either much reduced in size or entirely eradicated, but the subjects generally die from metastasis. In adults, the results have been much better. The writers then cite a number of illustrative cases. In the case of a man of 67, a light growth had appeared 10 years before, at the right inner canthus, which was partially removed by a plaster two years later. The lids apparently healed, but the growth recurred about six years later. On examination, a horseshoe shaped epithelioma was found involving the inner half of both upper and lower lids, and the inner canthus of the right eye, consisting of an elevated and indurated mass, covered with crusts. There was both palpebral and ocular conjunctival congestion. The patient was given 26 hours of treatment with a 50 mg. tube of radium, the treatments extending from July 12 to July 27. Two months later, radium was again applied for 20 hours, a 50 mg. tube being used daily from August 31 to September 12, the eye being protected during these applications by a 2 mm. lead screen. The result was completely successful, as shown by the photographs. A very successful result in a case of blastomycosis of the right lower lid in a boy of 17 is also recorded. In this case the growth was about one and one-half inches long and one-half inch wide. The total time of exposure to the radium amounted to 10 hours, a 50 mg. tube of radium being applied over the diseased area daily for six days. It is to be noted in this case that the patient was given iodide of potassium also, which may have been a factor in the good result.

ARSENICAL KERATOSIS AND EPITHELIOMA.[5]

It was Jonathan Hutchinson who first, in 1887, called attention to the fact that, under the prolonged internal use of arsenic, the nutrition of the skin may be seriously affected and that warty growths may, among other changes, be produced. Further than this, these keratoses may assume a tendency to grow downward, and eventuate in epithelial cancer. Previous to this, J. C. White, of Boston, had described an interesting case that occurred in a prominent medical man of Boston, under the title, psoriasis-verruca-epithelioma: a sequence. This case was later seen by Hutchinson also. Hamilton,[5] searching the literature, can find but 16 cases of arsenical cancer recorded, most of them without any histological report. He goes on to describe a very interesting case, occurring in a woman of 46 years, who took arsenic chiefly in the form of liquor arsenicalis for psoriasis for nine months in each year for 36 years. The psoriasis eruption, beginning when she was 10 years old, gradually increased from a scaly patch on her knee, until at 12 years of age, it had spread to her scalp, thighs and legs. She had been using chrysarobin, probably externally, in addition to the arsenic internally. Later, the arsenical preparation was changed to Fowler's solution.

For the last twenty years, she had noticed slight corns on her palms and on the dorsum of the hands, near the joints, and also on the sides of both feet, which gradually increased in size and numbers, and are well represented in the photographs. Twelve years ago, the areolae around the nipples began to be discolored and have since become gradually darker. Ten years ago she noticed a few yellow spots on her abdomen, and her feet became painful. A year ago she first noticed two spots the size of a pin's head on her right arm, which gradually increased in size, and were treated at a London hospital, first, by electrolysis, and then by carbon dioxide snow, but with only temporary benefit. The psoriasis would occasionally improve, but always recurred if she left off het medicine. Later, she went to the London Hospital when the tumor on her right arm measured one inch long by three-eighths inch wide, and projected one-fourth inch. There was marked hyperkeratosis of both palms and soles, with some pigmentation of the abdomen and scattered, small, yellow warts. The growth on the arm was excised, and was found to be a "squamous and horny carcinoma in the form of a malignant papilloma." It was noted that the patient was quite sure that she had never had psoriasis at the place on her arm where the warty growth, that become epitheliomatous, occurred. She had lost her sense of smell, and her eyesight was impaired, but there was no serious ocular lesion. The pigmentation did not correspond with the psoriasis, except for a patch on her left leg. There had been a general darkening of the skin, which felt rough, but not shotty, and there was some scaling which was becoming more prominent. There had been no symptoms from the side of the stomach or intestinal tract, nor any of the mouth or throat. There had been slight puffiness about the eyelids in the morning, and some numbness and tingling of the fingers, but no general neuritis, and no other symptoms from the side of the nervous system. The Wassermann reaction was negative, and examination of the blood showed only a slight leucocytosis. Traces of arsenic were found in the urine, also in scrapings from the skin, in the hair and in the nails. The peculiar features of this case are the occurrence of keratoses on places that had never been affected by the psoriasis, or at least not recently, and that the situation was not one in which the horny layer is especially thick, as on the palms and soles. In most of the previous cases, the malignant growths developed just on these latter regions.

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ABSTRACTORS.

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HEMOGLOBINURIA AFTER A SECOND TRANSFUSION WITH THE SAME DONOR.

Thalhimer, William (*Jour. A. M. A.*, May 14, 1921) reports a case in which hemolysis took place in a patient transfused a second time by the same donor and concludes that neither the blood group method nor the direct test alone is sufficient to safeguard against the danger of agglutination or hemolysis occurring after transfusion. It is believed essential that both of these tests be performed. This is especially true in transfusing children.

If the same donor is used for more than one transfusion on the same individual, the direct tests must be made each time before each transfusion. This is necessary because agglutinins and hemolysins originally absent, may develop against a donor's blood when the donor is used more than once in the transfusion of the same patient. [E. H. R.]

INVAGINATION OF MECKEL'S DIVERTICULUM.

Depisch (*Wien. klin. Woch.*, May 19, 1921) reports a case of invagination of a Meckel's diverticulum with consequent intussusception. In this condition he advises the earliest possible operation, with resection of the bowel as a rule, exceptionally resection of the diverticulum in fresh, suitable cases; in doubtful cases, enterostomy or enteroanastomosis with isolation of the invagination tumor. [R. M. G.]

SALVARSAN IN PULMONARY GANGRENE.

Molnár (*Wien. klin. Woch.*, May 19, 1921), in a series of six cases of pulmonary gangrene treated with salvarsan at Korâneji's third university medical clinic at Budapest, reports that permanence and rapidity of cure are proportional to the duration of the disease. In acute cases, therefore, experimentation with different means is not recommended, and pneumotomy should also be superfluous. Salvarsan treatment, he believes, should begin at once. [R. M. G.]

THE BOSTON
Medical and Surgical Journal
Established in 1828

THURSDAY, JULY 21, 1921

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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SUBSCRIPTION TERMS: *$6.00 per year, in advance, postage paid for the United States, $7.56 per year for all foreign countries belonging to the Postal Union*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the printer with galley proof of paper. Upon written request, authors will be furnished free one hundred eight-page reprints, without covers, or the equivalent in pages in articles of greater length.

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Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

"MEDICINAL BEER."

IN an address delivered before the Judiciary Committee of the House of Representatives, Washington, on May 12, 1921, Mr. Oliver T. Remmers, Attorney for Anheuser-Busch, St. Louis, puts forward some very potent arguments against allowing the manufacture of beer for medicine. The brief of his address is as follows:

> Of the reasons why Anheuser-Busch, although unalterably opposed to prohibition, and in favor of the manufacture of lawful beer for all purposes, opposes the manufacture of beer for medicine.
>
> Impossibility of equitably and impartially enforcing prohibitory laws, under rule of beer for medicine, will result in criticism and abuse of manufacturers of lawful cereal beverages, and may bring further ruinous legislation upon the industry, probably destroying the soft drink business created by former breweries.
>
> Congressional investigation of favoritism and failure in the enforcement of prohibition suggested.

The fourth point in Mr. Remmer's argument deals with the position of medical men in regard to the prescribing of beer. He says:

> You, as members of this committee, know and I know that the interpretation of the law permitting the sale of beer for medicinal purposes, in its practical operation, will result principally in the sale of beer at outrageous prices, through restricted channels, to the healthy—and not the sick. The verse we facetiously sang in local option elections about the saloon, "Don't you cry, you will be a drug store bye and bye," will become a reality. You know that every doctor will be besieged by his regular patients for beer prescriptions; that the standard and dignity of the medical profession will be lowered, and that the doctor himself will practically become the bartender for his perfectly healthy customers. He cannot well refuse to issue such prescriptions, as his practice must inevitably suffer, because a great many of his patients would take offense at his attitude and find another more accommodating family physicians. Every young physician entering medical practice without patients would find it so easy to make a living, writing beer prescriptions that he would not feel the urge of improving his knowledge of medicine, and gradually the standard of the medical profession would be demoralized.

While Mr. Remmers undoubtedly overemphasizes the evil which will befall physicians who refuse to prescribe beer, there is still much truth in what he says.

It will be entirely unfair to place upon doctors the responsibility for the sale of malt liquors. The conscientious would be continually harassed by requests which they would feel obliged to refuse, while the unscrupulous would profit by breaking the spirit, if not the letter of prohibition. And what a temptation for the doctor to prescribe for himself a stein of cool, foaming "tonic" these sultry days!

ACTIVITIES OF THE ROCKEFELLER FOUNDATION.

A RECENT article by George E. Vincent, President of the Rockefeller Foundation,* gives an outline of the work now being undertaken by the Foundation.

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* *The Nation's Health*, Vol. iii, No. 5, May, 1921.

The scope of this work is amazing. Like "All Gaul," it is divided into three parts—The International Health Board, The China Medical Board and the Division of Medical Education. The International Health Board is at present engaged in the control and prevention of certain endemic diseases, and in the training of a personnel to conduct these campaigns. For the latter purpose, the Foundation has established at Johns Hopkins University, a School of Hygiene and Public Health.

The diseases under attack are hookworm disease, malaria and yellow fever, and tuberculosis in France. Of these, hookworm is the one which engages the greatest amount of funds and personnel. Prevention of this disease is being undertaken not only in our Southern States, but in the West Indies, in the northern part of South America, in Central America, Ceylon, parts of India, in certain of the East Indies, in Papua and in Queensland.

Experiments in malaria control have been carried on in Arkansas and Mississippi and have demonstrated that it is possible to control malaria at an installation cost of about one dollar per capita and at a maintenance expense of about fifty cents per capita.

In 1918, while on an expedition sent by the Foundation to Guayaquil to investigate the causes of yellow fever, Dr. Hideyo Nozuchi discovered an organism, Leptospira Icteroides, which appears pretty definitely to be the organism causing yellow fever.

Mosquito control established in Guayaquil, has already resulted in a marked decrease in the number of cases of yellow fever in that country. The Foundation has sent a commission to Africa to investigate yellow fever there.

Another phase of activity of the Foundation is the development of Medical Education in China. This is under the control of the China Medical Board, which is centralizing medical education in China, about the Peking Union Medical College. A number of hospitals in different parts of China are being aided, and fellowships have been established for Chinese students and for missionaries on furlough.

The Division of Medical Education concerns itself, naturally, with the standard of medical schools, and with the granting of financial aid to selected schools. Three million dollars have been given to Canadian medical schools, five million dollars to the University of London, three million five hundred thousand dollars to the University of Brussels.

Considering that the Foundation was established only eight years ago, and that its work was greatly hampered by the war, one is astounded at the breadth and importance of its activities. The international scope of the work is peculiar to this century, and seems to presage an entirely new viewpoint, a viewpoint which regards the world as a unit, and not as so many different countries. It is fitting that medical science should be the medium through which this new conception takes form.

* * *

FEDERALIZATION OF FOOD AND DRUG CONTROL.

THE extent to which it is wise for the Federal Government to limit the right of a State to protect the health and the commerce of its people against exploitation by non-residents, and the extent to which it has the constitutional right to do so, are certain to come up for serious consideration in connection with a bill recently introduced into the United States Senate. The bill (S. 1887) provides that no law of any state, city, or municipality, relating to the adulteration and labeling of foods, drugs, or medicines shall apply to or interfere with the sale of any such article in package form after it has been transported to interstate commerce. In order that there may be no misunderstanding as to just what the bill is intended to accomplish the words, "In package form," are defined to include the individual package in which the article is sold to the consumer.

Milk, whether pus-laden, sour, or containing added water or preservatives, coming in cans or bottles across the state line, so long as it remains in the cans and bottles is to be free from local interference. Even milk that has been brought into the state in good condition and has spoiled in the original container is to be immune from attack by the state or city officials. No matter how long it has been in the state, and no matter how many hands it has passed through since it arrived, it is subject only to federal jurisdiction and owes no duty to the state. And what is true of milk is to be likewise true of every food, drug and medicine that once finds its way into the channels of interstate commerce. Poisons of all kinds, including alcohol, narcotics, and other habit-forming drugs, so long as they are in the original container, are no longer to be subject to state and city laws requiring registration of sales and affixing of protective labels, and yet except in so far as relates to alcohol, narcotics and other habit-forming drugs, there is no federal law under which registration and labeling would be necessary. And state laws to prevent fraudulent advertising are to be of no avail with respect to the misrepresentation of foodstuffs, drugs or medicines brought in package form from beyond the boundary and remaining in package form, notwithstanding that the Federal Government has no law adequate to prevent fraudulent advertising, while many states have such laws. No person offering for sale or selling any food, drug, or medicine in the package in which it was brought from without the state is to be prosecuted except under the federal law and in a federal court, nor is any such food, drug, or medicine to be seized or destroyed except under federal process.

Variations between federal and state laws and among state laws do undoubtedly at times embarrass manufacturers and distributors of foods, drugs, and medicines, but it would hardly seem the part of wisdom to conclude without better evidence than now exists that the state laws are always wrong and the federal laws always right, and summarily to wipe out state laws altogether. The balance is quite as likely in favor of the state laws, certainly in so far as local needs are concerned, since these laws are the results of careful studies of local situations by men who have at heart the best interests of the communities that they serve and who are definitly responsive to public opinion. Food and drug legislation at the Nation's capitol, on the other hand, forms too small a part of the vast bulk of matter that goes into the Congressional hopper to be sure always of prompt and intelligent consideration; and it is there considered, too, primarily as a commercial matter, being referred in the Senate to the Committee on Commerce and in the House of Representatives to the Committee on Interstate and Foreign Commerce, where purely commercial lobbies always hope to get in their purely commercial work.

In favor of state laws, it must be recognized that any effort to frame federal food and drug legislation so that it will effectively and equally meet local needs of each and every part of the United States is practically certain to be attended with failure. Not only are the requirements of commerce and of health protection different in different localities, but the facilities for the execution and enforcement of food and drug laws vary widely. The execution and enforcement of such laws might be left primarily to state and city officials, but it would be unreasonable to expect them whole-heartedly to perform any such duty so long as the Government at Washington denied them any immediate voice in making the laws. But in any event, all prosecutions and procedures looking toward the seizure and destruction of unlawful foods, drugs and medicines, would have to be brought in United States courts, relatively few and far apart as compared with the innumerable state and municipal courts now available, and attendance on such United States courts would entail great loss of time and great expense on the law-enforcing officers, on witnesses, and on persons proceeded against. At most, federal legislation with respect to local sales of foods, drugs and medicines, whether originating in interstate commerce or not, should represent certain minimum requirements which each and every state should be entirely at liberty to supplement as local needs may indicate.

Intelligent manufacturers do not expect to distribute their wares without trouble, inconvenience and expense. They fix prices for their goods that make the people pay for all trouble, inconvenience and expense to which the manufacturers and the various distribution agencies are subjected. And the people pay, as they signify their willingness to do when through their authorized representatives or other officers they place restrictions of any kind on manufacture and commerce, for the protection of the community. It is not unlikely that a few responsible, public spirited, capable manufacturers and merchants, who have considered only superficially such legislation as is now proposed, may be in favor of its enactment; the very title of the bill—A bill to protect interstate commerce in foods, drugs and medicines, and to extend the provisions of the Food and Drugs Act of June 30, 1906—has been adroitly framed to create an atmosphere favorable for the reception of the bill. If experience counts for anything, however, it is to be suspected that the introduction of this bill was stimulated, and that its passage will be urged, largely if not altogether, by the narrow-minded, small, and unscrupulous manufacturer and merchant, who looks on any legislation for the protection of the food supply as an infringement on his personal liberty and who regards such legislation as satisfactory in proportion as it is difficult of enforcement and therefore not likely to be enforced.

Congress may give no serious consideration to this legislation, seeking to deprive the states of their right to defend the health and commerce of their people against exploitation from without. Quite aside from any other consideration, the demand just now for economy in the administration of the Federal Government is likely to cause Congress to pause if it begins to figure out the cost of what the Federal Government will have to provide in the way of additional courts, inspection forces and other expenses of administration, if it plans effectively to occupy the field from which this bill seeks to oust the states, cities and municipalities; and it is conceivable that Congress would willingly leave such a field uncovered after it had ousted them. Still, it will be of distinct advantage to physicians and others interested in the wholesomeness of the food and the drug supplies of their respective states, in the regulation of the traffic in habit-forming drugs, and in the regulation of traffic in poisons generally, write at once to their respective congressmen, urging opposition to this legislation.

Following is the full text of the bill (S. 1887):

To protect interstate commerce in foods, drugs, and medicines, and to extend the provisions of the Food and Drugs Act of June 30, 1906.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That no law of any State, city, or municipality relating to the adulteration or misbranding of foods, drugs, or medicines or regulating the branding thereof shall apply to, or interfere with, the sale of any foods, drugs, or medicines, in package form, which have been transported in interstate commerce and thereby have become subject to the provisions of the Food and Drugs Act of June 30, 1906 (Thirty-fourth Statutes at Large, page 768), and which are not as now amended or as the same may be hereafter amended, adulterated, or misbranded within the meaning of said Act so long as said articles remain in package form and not adulterated as aforesaid and labeled as when transported as aforesaid. The words, "in package form," as used herein, shall be held to include the individual package in which or from which the articles are sold to the ultimate consumer.

Sec. 2. That all of the provisions of the Food and Drugs Act of June 30, 1906, (Thirty-fourth Statutes at Large, page 768), are hereby extended so as to apply wherever applicable to all foods, drugs, and medicines in package form which have become subject to the provisions of said Act until said products have been sold and delivered to the ultimate consumer thereof.

WM. C. WOODWARD, M.D.

MEDICAL NOTES.

THE BOARD OF SCIENTIFIC DIRECTORS OF THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH announces the following promotions and appointments: Dr. Frederic L. Gates, hitherto an Associate in Pathology and Bacteriology, has been made an Associate Member; Dr. Frederic S. Jones, hitherto an Associate in the Department of Animal Pathology, has been made an Associate Member; Dr. Goronwy O. Broun, hitherto a Fellow in Pathology and Bacteriology, has been made an Assistant.

The following new appointments are announced: Dr. E. V. Cowdry, Associate Member in Pathology and Bacteriology; Dr. Albert Fischer, Assistant in Experimental Surgery; Dr. William A. Hagan, Assistant in the Department of Animal Pathology; Dr. Albert B. Hastings, Assistant in Chemistry; Dr. Hugh J. Morgan, Assistant in Medicine; Mr. David I. Hitchcock, Fellow in General Physiology; Mr. James M. Neill, Fellow in Medicine.

Dr. John Auer, hitherto an Associate Member in Physiology and Pharmacology, has accepted a position as Professor of Pharmacology at St. Louis University.

Dr. Francis G. Blake, hitherto an Associate Member in Medicine, has accepted a position as Professor of Medicine in Yale University School of Medicine.

Dr. J. Harold Austin, hitherto an Associate in Medicine, has accepted a position as Professor of Research Medicine at the University of Pennsylvania.

Dr. Glenn E. Cullen, hitherto an Associate in Chemistry, has accepted a position as Associate Professor of Research Medicine at the University of Pennsylvania.

Dr. William C. Stadie, hitherto an Associate in Medicine, has accepted a position as Assistant Professor in Medicine at Yale University School of Medicine.

Dr. Martha Wollstein, hitherto an Associate in Pathology and Bacteriology, has accepted a position as Pathologist at the Babies' Hospital, New York City.

Dr. Israel J. Kligler, hitherto an Associate in Bacteriology, has accepted an appointment with the Zionist Medical Unit in Palestine.

"Isn't this rather a peculiar ad. for the Boston Medical and Surgical Journal?" is the query propounded with reference to one of the display advertisements. Yes, it is, and nobody is more ashamed of it than the Editor, but the Massachusetts Medical Society took over the assets and *liabilities* of the former owners, and contracts have to be carried out.

Armour and Company announce the addition of the following preparations to their list: Suprarenal Cortex, Suprarenal Medulla, Placental Substance. Physicians desiring to use these products may get them from headquarters for the organo-therapeutic agents.

Dr. Walter E. Fernald of Waverley, has been appointed delegate to the Second International Congress of Eugenics, to be held in New York City, September 22-28, 1921, under the terms of the vote of the Council of the Massachusetts Medical Society, May 31, 1921, directing the President to appoint a delegate to this Congress.

Keep the baby comfortable in hot weather. Avoid too much clothing and overfeeding.

Obituaries.

FREDERICK N. BEARDSLEE, M.D.

Dr. Frederick N. Beardslee, forty-six years old, passed away recently at the summer home of his mother, 14 Bulkley Manor, Rye, N. Y., after an illness of six weeks. Dr. Beardslee was a prominent physician of Manchester, N. H., and during the war did service as surgeon on the White Star Line. He was a graduate of Boston University.

RESOLUTIONS ON THE DEATH OF DR. JAMES F. BRADY.

The death of Dr. James F. Brady takes away from the Carney Hospital one who will be greatly missed. Although connected with the Dermatological Department a little less than a year, as a result of Dr. Brady's energy, interest and effort, this department, which was closed during the World War, rapidly enlarged and showed good prospects for an extensive and important clinic.

Kind, gentle and unassuming, and especially considerate of the poor; studious and persevering in an effort to advance in his profession, Dr. Brady made friends and endeared himself to his associates.

By vote of the Governing Board of the Carney Hospital these resolutions have been adopted, entered upon the records, a copy to be sent to Mrs. James F. Brady and also to the Boston Medical and Surgical Journal for publication.

Daniel F. Mahoney,
Secretary of the Governing Board,
Carney Hospital.

WALLACE CALVIN ABBOTT, M.D.

Dr. Wallace Calvin Abbott, who died at his home, 4605 N. Hermitage Avenue, Chicago, at 1.30 a.m., July 4th, was born in Bridgewater, Vt., October 12, 1857. His early education was obtained at the State Normal School, Randolph, Vt., the St. Johnsbury Academy, St. Johnsbury, Vt., and Dartmouth College, Hanover, N. H. Coming west, he worked his way through the University of

Michigan, winning his degree as Doctor of Medicine in 1885. The following year he engaged in the practice of medicine in Chicago, building up a large practice on the North Side and winning many friends.

It was during this time that Dr. Abbott established The Abbott Alkaloidal Company, now known as The Abbott Laboratories, of which firm he was President continuously from the time of its establishment, more than thirty years ago, until his death.

Miscellany.

VENEREAL DISEASE CONTROL.

A great disinterested public spirit is seeking, through public health officers, to wipe out a group of controllable infections—the venereal diseases. A large body of equally well intentioned private agents, in the form of the medical profession, derives its livelihood, at least in part, from the same source. An antagonism between the public activity and private interest, which might so easily develop in such a situation, would be wholly unnecessary and deplorable. The United States Public Health Service and the associated venereal disease divisions of various state boards of health realized the implications of their entry into this field of medical practice and submitted a declaration of principles and intentions, the summary of which is:

They endorse and urge the continuance of a campaign of public education.

They ask the intelligent and sympathetic coöperation of the medical profession. This coöperation can best be obtained by the rapid extension of specialized teaching facilities for the medical students; by making available to physicians the latest developments concerning the venereal diseases; and by the development of state diagnostic facilities for the use of practicing physicians.

Having accepted its share of responsibility for developing an appropriate equipment, the Public Health Service and its affiliated state organizations urge physicians at large to move for a general raising of the standard of treatment of the venereal diseases. In the words of the resolution:

This implies that a physician who is unfamiliar with or unprepared to employ modern methods in the management of these diseases, should not accept such cases for treatment, but should refer them to some private or public physician who is properly equipped.

If the medical profession can treat the venereal disease patients adequately, the United States Public Health Service and the state boards of health pledge themselves not to invade the field of private practice in this phase of medical work.

The extinction of private practice in venereal disease is not a consummation to be wished, but it will be one to be deserved if the medical profession cannot measure up, by a process of internal organization and adjustment, to the standards of the most altruistic and energetic public agent in the field.

The United States Public Health Service and the state venereal disease bureaus, backed by one of the most powerful sentiments now concentrated on any health problem, have expressed a desire for coöperation with the medical profession and indicated a way for its achievement.

Interim Report of the Neurosyphilis Investigation of the Massachusetts Commission on Mental Diseases. By Oscar Raeder, M.D., Bulletin of the Massachusetts Department of Mental Diseases. Vol. IV., No. 2, April, 1920.

In order to make an early diagnosis of neurosyphilis, the Psychopathic Department applied the Wassermann test to the spouses, children, and parents of syphilitics. After diagnosing the cases as positive neurosyphilis, treatment was instituted. As a systematic basis, a time span of three months, during which intensive treatment with arsphenamine and mercury were given, was chosen. In this time, it could be determined whether a case will react favorably or otherwise. The author considers the cases as cured when the Wassermanns become negative in the blood and fluid, globulin and albumin practically normal, cells reduced to within five and a slight gold reaction in three or more tubes, with partial reduction in the syphilitic zone, provided, of course, the patients have mentally recovered and show no more organic defects than an Argyll Robertson pupil or a pathological knee jerk, for example.

RESULTS OF TREATMENT.

In a comparative study of the laboratory changes in a limited number of clinically improved cases (28) in which the investigators were able to get complete before- and-after tests of sera and spinal fluids, they found the following:

Improved Cases.

A. Improved as to Wassermann reaction on blood and fluid and gold sol., 9, or 32%.

B. Improved as to Wassermann reaction on blood only, additional, 5, or 18%.

A and B. Improved as to Wassermann reaction on blood, 14, or 50%.

C. Improved as to gold sol only, 3, or 11%.

D. Improved as to Wassermann reaction on cerebrospinal fluid and gold sol, 1, or 4%.

E. Stationary as to Wassermann reaction on serum and gold sol, 9, or 32%.

F. Worse as to Wassermann reaction on serum and fluid and gold sol, 1, or 4%.

Under A are represented nine cases—seven of these had a positive reaction on serum and spinal fluid and a more or less typical paretic curve; the other two had negative Wassermann reactions on the serum, but were otherwise the same. All nine cases showed great improvement after intensive treatment extending over a period of from three months to four years.

Under B, there are five additional cases in which the blood serum became negative, the spinal fluid remaining unchanged. Thus, including the cases under A and B, there were 14 improved cases, or 50%, in which the Wassermann reaction of the serum became negative.

In a study of 27 cases, with complete data taken before treatment and again shortly before death, it is shown that 56% of the cases were practically unaffected by the treatment.

One case showed evidence of improvement as to Wassermann reaction on fluid and the gold sol, but the Wassermann reaction on the serum remained positive.

Two cases showed improvement in the Wassermann reaction on both serum and fluid; in one case, two doubtfuls changed to two negatives; and others, both positive at first, changed to both negative, with a slight improvement on the serum only.

Distinct improvement in the gold sol curve without reaction in the Wassermann test, occurred in four cases, or 15%. One of these cases showed a practically negative gold sol, with a terminal marked tabetic involvement during the last four months.

Fifteen cases, or 56%, showed no changes in the serology or fluid findings from the time of the first examination until death.

One case in which the Wassermann reaction was first—on the blood all the other reactions positive for paresis, grew worse until after treatment, and at remission the blood serum also became straight positive before death.

According to this analysis of fatal cases in which minute care was taken to observe all the laboratory and clinical changes, including also, besides the Wassermann tests and gold sol reaction, the cell count, albumin and globulin estimation, it was found that over 56% of the cases in which the diagnosis of neurosyphilis is crystal clear, both from a clinical and laboratory standpoint, may be expected to end unfavorably. With exceptions, little or nothing can help these fully developed "committed type" cases.

CONCLUSIONS.

In 428 cases of neurosyphilis treated during a period of four years, 129 cases, or practically 30%, showed definite benefit; 125 cases are under treatment at hospitals, of which a certain percentage can be expected to show similar improvement. Among 93 cases that have drifted away, another definite proportion, probably a larger number, comparatively, can be presumed to have benefited from treatment.

There are two definite groups of cases of neurosyphilis: the early, or the psycopathic hospital group, and the advanced committable or custodial group. The early case is not met in insane hospitals, except in such as conduct out-patient departments. These cases also frequently first come to professional attention through the field of general or "internal" medicine.

The relatives of syphilitics and neurosyphilitics form a most important group in which not only syphilis, but the earliest degrees of neurosphilis, in the presympomatic stages are brought to light by lumbar puncture and seroanalysis. It is in these types that by far the most important benefit can be expected.

Early diagnosis, preferably before pronounced mental symptoms have appeared, gives the greatest promise of successful results. For it seems that for some reason the curative agent is less able, or practically unable, to influence certain bacterial toxins after they have had time to combine with the neuroplasm. Another instance of this phenomenon is shown in the case of the tetanus toxin.

Apparently advanced neurosyphilis is not a contraindication to treatment—there is a distinct, though not large, percentage of such cases that amply gratify the efforts of intensive attack.

In early and typical cases, the most exhaustive serological and spinal fluid examinations are the best guides to the diagnosis. The provocative method should not be overlooked.

Intensive and prolonged treatment to the point of saturation with the combined force of the three specifics—arsenic, mercury and potassium iodide. Arsphenamine has been preferred to neoarsphenamine as more lasting in its effects.

The therapia praesens of neurosyphilis is but a transition state in rational syphilotherapy. Medical science had discovered several good clues which must be followed up, and others ferreted out and run down, before the solution of the problem is complete. Indeed, the successful treatment of paresis and tabes as the crippling cradiopathos, etc., may ultimately be realized in the field of preventive medicine. With chemotherapy, however, Ehrlich has doubtless found the most vulnerable approach to the treponemiotic diseases, but further research is necessary and other combinations must be found before the life of this anthropophagus pest is successfully snuffed out.

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IMPROVED SERVICE IN CULTURE STATIONS OF BOSTON HEALTH DEPARTMENT.

DIFFICULTIES experienced by physicians in procuring laboratory outfits through the 56 culture stations established by the Health Department and in procuring the prompt delivery to the Health Department of specimens to be examined will be done away with, it is believed, under a new system just inauguarted by the Health Department.

Proprietors of culture stations have heretofore had to send to the Public Health Department for such outfits as they needed and to deliver to the Health Department such specimens as were left with them for examination. They received no compensation, but each was reimbursed for the carfare expended in procuring and delivering the outfits and was allowed ten cents for messenger service for each round trip to and from the Health Department. The service was thus a burden upon the druggist who maintained a culture station and was ordinarily rendered by him solely as a matter or public spirit and as a manifestation of his good will toward the medical profession, with possibly the expectation that the service thus rendered the public and the profession would bring increased business to the establishment. Even with the greatest of public spirit, however, and with the utmost good will, the druggist sometimes failed to keep his stock of outfits up to date and at times found it impossible promptly to despatch specimens to the Health Department for examination. Such failures annoyed the physician and sometimes he and his patient were greatly embarrassed by the tardiness of laboratory reports, amounting to even as much as twenty-four hours.

To correct the situation set forth above, the Health Department has established an automobile service through which it will deliver to any culture station, any day, such outfits as are needed and collect such as have been left for examination, it being necessary only for the proprietor to telephone his requirements to the Health Department, and for the cost of telephone service he is to be reimbursed. Specimens left at culture stations in any part of the city before five o'clock P.M., will be collected the same day by messenger from the Health Department, provided the druggist sends in a telephone call before five o'clock.

Physicians who have occasion to submit specimens for examination that cannot be left at a culture station before five o'clock P.M., and which they desire to have reported upon on the following day, can accomplish that end by delivering the specimens, or having them delivered at their own expense, at the Health Department, in City Hall Annex, at any hour up to 11 o'clock P.M.

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Correspondence.

THE USE OF STROPHANTHIN, OR STROPHANTHUS IN TREATMENT OF ACUTE CARDIAC FAILURE.

Mr. Editor:—

Dr. Thomas J. O'Brien's article in your issue of July 7, 1921, is admirable, and especially to my mind, in the great stress it gives to the use of strophanthin, given intravenously. There are instances, however, in which the use of the hypodermic syringe is not available, either to the practitioner, or to the onlookers, or to the patient. Under these circumstances, I claim the immense practical advantage of the use of hypodermic tablets of tincture of strophanthus, given sublingually. I have written more than once during the last few years, affirming the great value of this method of medication. To those who are interested in this all-important matter, and every practitioner of medicine should be, I refer them to my article on "Acute Indigestion," *New York Medical Journal*, May 15, 1920.

Peverley Robinson, M.D.

New York, July 9, 1921.

IS THERE A SHORTAGE OF COUNTRY PHYSICIANS?

July 5, 1921.

Editor, Boston Medical and Surgical Journal:—

Since writing to you two weeks ago regarding the pseudo shortage of physicians in the country districts of Massachusetts, I have gained some additional information which may be of interest to you. As a result of the original advertisement and your notice of it, I have received three additional letters from within the state. One was from a doctor who had a practice and real estate to sell in a community of 3000, with a competitor already on the field. The second was in regard to a supposed opportunity in a town of 850 with two doctors of a sort already there. The third, evidently a joke, was an unsigned laconic note as follows: "Try ———." I made inquiries and found there was a doctor already there—had been there over forty years, in fact—and that there was not a house for sale or rent in the whole township. Now a town that cannot offer an incoming doctor a sheltering roof doesn't want a doctor badly enough to justify his locating there.

In addition, I have written letters of inquiry, sixteen of them, directly to ministers, doctors, or town officers to get information regarding some nineteen townships which, according to Polk's latest directory, are physicianless. I have enclosed a stamped envelope for a reply in every case but one. I have heard from most of these towns. Not a single answer has yet been received that evinced any intelligent enthusiasm regarding the matter of getting a doctor to locate in the community. All the answers were polite, but gave no encouragement either as regards financial reward or sympathy of the community. Perhaps such will appear in one of the three answers yet looked for.

I have also had the sympathetic coöperation of a big Boston drug firm that sells direct to doctors. Every one of its drummers canvassing in the state is looking up the matter, but not a single opening for a new physician has yet been reported to me.

If some of the noisy medical philanthropists who are constantly spouting so much "sob-stuff" regarding the medical destituton of the Massachusetts hill towns will be kind enough to point out one single township village, or cross-roads in the state where an educated, well-equipped incoming physician can have any reasonable hope of paying his current bills during the first year of practice, let alone buying his equipment out of his savings, the public will be glad to know where that spot is.

"Medicus."

July 2, 1921.

MALPRACTICE INDEMNITY.

July 21, 1921.

Mr. Editor:—

Considering that the Malpractice Defense Act of the Massachusetts Medical Society was founded in 1908 on a by-law passed by the Medical Society of the State of New York in 1902, it will interest the Fellows to learn from the following copy of a circular letter, recently sent out by the counsel of that society to its members and kindly furnished me by Dr. Edward Livingston Hunt, secretary, how our sister state has met the present-day demand for indemnity from damages for those members who have been sued for malpractice, provided they wish to avail themselves of the plan now in effect in New York.

Walter L. Burrage, *Secretary.*

May 26, 1921.

Dear Doctor:—

In the report which I, as legal counsel of the Medical Society of the State of New York, submitted to the House of Delegates at its last meeting, I called attention to the increase in number of suits against physicians by patients and to the fact that the practice of medicine is becoming constantly more hazardous to the physician. The law requires that physicians keep abreast of the times in the practice of their profession, and in recent years the progress that has been made in methods of diagnosis and treatment made possible by various scientific discoveries and improvement in the use of the x-ray and mechanical appliances have added a great burden of responsibility to the physician in his practice. These improvements have resulted in great benefit to the patient and in an added legal liability on the part of the physican to the patient. This increasing hazard to the physician in the practice of medicine has been recognized by insurance companies and a number have accordingly discontinued writing physicians' and surgeons' liability insurance, and those that have continued to write it have materially raised their rates, some to the extent of from two to three hundred per cent. It has, therefore, been recommended by me to the House of Delegates that the malpractice defense policy of the Society should be continued as heretofore, but that there should be added an indemnity feature available to the members for financial protection at rates and under conditions and safeguards that could not be elsewhere procured. This recommendation was considered by a committee and reported favorably and unanimously adopted by the House of Delegates (May 2, 1921). It provides that the Society's malpractice defense shall continue as heretofore; that members wishing insurance in conjunction with the State Society's defense, *i.e.*, State Society's malpractice defense plus a provision for the payment of judgments, can have it under an insurance plan arranged for with an insurance company; those not desiring the indemnity feature may continue to have malpractice defense as of old, but must, of course, as has been the case heretofore, pay any judgment that may be had against them.

For your information, a copy of the resolution adopted on this report of the House of Delegates is herewith furnished, and is as follows, to wit:

> "Resolved that the Medical Society of the State of New York, through its House of Delegates now assembled, upon the recommendation of the legal counsel of the said Society, hereby endorses said plan and approves of the same and authorizes the Council, officers, legal counsel of the Society and the County Medical Societies to take such action with respect thereto as shall be fit and proper to carry the same into effect, provided that nothing herein contained shall require any member of this Society to release his right now existing to participate in the benefits of the Malpractice Defense or compel him to subscribe to Malpractice Defense insurance, except as he shall so elect."

Accordingly, arrangements have been made with the Aetna Life Insurance Company, which has assets of about $180,000,000, to provide such indemnity in conjunction and in addition to the malpractice defense of this Society under a form of policy available to the members of the Society. The policy will be for a term of three years, carrying $5,000 for any one claim and $15,000 in any one policy year if there be more than one claim, and the charge for such policy to be $18 per year. Higher limits may be had for slightly increased cost if desired. Members now carrying physicians' and surgeons' liability insurance in the Aetna Life Insurance Company may, if they desire, cancel the same on a pro rata basis and have the return premium credited to the new certificates, and where members have policies in other companies, they may have their certificates under this new plan with the Aetna Company take effect at the expiration of their present policies or they may take the present policy in addition to what they already have. Every possible means has been provided to have the actual investigation of the claims, preparation and trial of the cases under the control and direction of the counsel of the Society, and the excellent machinery now provided by the Aetna Life Insurance Company will be made available to counsel of the Society in the investigation and preparation of the cases. The cases will be conducted by the counsel of the Society and assistance will be had, where necessary, from the representatives of the insurance company. No settlement of claims will be made without the consent of the doctor affected, and suitable safeguards are provided against improper settlements. This whole plan has been investigated carefully by the Council of the Medical Society of the State and is recommended as satisfactory by them. The benefits of this plan are now available and I enclose herewith form of application should you desire in addition to your malpractice defense already assured, indemnity against judgments or claims.

It is recommended that you give this matter your immediate attention

Sincerely yours,

GEORGE W. WHITESIDE.
Counsel, Medical Society,
State of New York.

PROHIBITION AND THE MEDICAL PROFESSION AGAIN.

Mr. Editor:—

Referring to the letter of Dr. George W. Gay on the subject of prohibition as it relates to the medical profession, published in your issue of July 7, last, it seems to me that the other side of the question should receive some attention. Dr. Gay speaks of the position of the House of Delegates of the American Medical Association on the question of the use of alcohol, at its recent session in Boston, as something praiseworthy, whereas, in my view, it appeared that the House of Delegates demonstrated the futility of such a heterogeneous body of constantly shifting membership with only one meeting a year, trying to arrive at any definite and just conclusion on an important question of public policy. Certainly the dictum in the first resolution, namely: "That its (alcohol's) use as a food or in therapeutics as a tonic and a stimulant has no scientific basis" is not the view of a majority of the profession today, nor was it when the resolution passed the House in 1917. As regards the second resolution offered at the Boston Meeting but not passed, every profession harbors a number of unworthy members and one need not be surprised that there are physicians who so far forget their standards as to prescribe alcohol for profit. The House of Delegates, in the language of the day "passed the buck" by referring a decision to the next session in 1922.

That a saner use of alcohol has become the custom of physicians of late years is evidenced by the statistics quoted by Dr. Gay, contrasting the quantity prescribed in the two largest hospitals of Boston in the past, and the small quantity in recent years. This in spite of increased use of alcohol by the public at large, thereby showing that the profession can be trusted safely in this matter.

Some three centuries ago the Puritan settlers in New England were afflicted with the prohibiting malady. They prohibited everything that man could desire except strong drink. Their descendents regarded this propensity to prevent enjoyment of life as a joke. A recrudescence of the malady appeared in the twentieth century, this time centering on the issue that had been neglected earlier—alcohol as a beverage. Some alienists diagnosed the affection as hysteria. The wave of prohibition, that had been constantly gaining strength for several years, broke over the United States two years ago, doing a vast amount of good, for abuses of long growth had to be rectified and there seemed to be then no other practical method, except by the Volstead Act. The amendment to the Constitution which followed the act, made effective a check on personal liberty, especially as it concerns us, on the liberty of the medical profession to prescribe whatever remedies in their judgment are best. Now comes the Volstead, Jr. act, the "antimedicine beer bill," before Congress, that still further seeks to limit the freedom of the profession. It passed the House recently by 250 to 93.

I am one who believes that Congress is not competent to tell physicians what they ought to prescribe. As to the use of narcotic drugs, the Harrison Act was necessary in order to correct another abuse. The profession do not complain of its provisions. They do object to the conditions under which alcohol may be prescribed at the present time. Instance Pueblo, Colorado, where, in its recent disaster, there was at first no stimulant available to give to the exhausted victims of the flood, to save lives that were better lost, in the opinion of prohibition fanatics.

No wonder the foreign nations laugh at us, just as we smiled when the new State of Oklahoma inserted a provision in its constitution that no sheet in the state should be less than nine feet long. Evidently some tall constitution builder had suffered with short sheets. When we legislate in this land of freedom what our citizens shall eat and drink we must expect to have the rest of the world smile at our provincialism and narrow mindedness. The abuse of the use of alcohol as a beverage has been checked. The saloons have gone. The next thing to do, in my humble opinion, is to so modify the law that alcohol may be used in medicine when it is indicated and the poor man, who has few pleasures and privileges, may have his light wine and beer if he so elects. That this is the wise course for the future is attested by the growing evidences of the evasion of the dry law, the increased number of arrests for drunkenness the harm done by drinking hard liquors of inferior quality, often dangerous to health, and by the very general spread of hypocrisy in the community. The State of Maine, be it remembered, has suffered with prohibition since 1851.

A PRACTITIONER OF MEDICINE.

Bangor, Maine, July 9, 1921.

How many towns in Massachusetts are providing dental clinics? Good teeth are of the greatest importance to growing children. A child with normal teeth stands a better chance for development and resistance to infection than one unable to present food to the stomach in proper condition or one whose mouth has foci of septic bacteria.